

SOUTHWEST ASIA II -
BAHRAIN, ISRAEL, JORDAN, LEBANON, OMAN, QATAR,
SYRIA,
UNITED ARAB EMIRATES, AND YEMEN

SUBCOURSE NUMBER IS3009

EDITION B

U.S. ARMY INTELLIGENCE CENTER
FORT HUACHUCA, AZ 85613-6000

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SUBCOURSE OVERVIEW

This subcourse is the second subcourse in a series covering Northeast Africa and South and Southwest Asia. We designed this subcourse to teach you basic background information of selected countries of Southwest Asia. Contained within this subcourse are instructions on how to recognize the general characteristics and historical perspectives of Southwest Asia and the strategic significance of the region. Furthermore, there are instructions on military capabilities, history, weather, terrain, and lines of communications (LOCs) of Bahrain, Israel, Jordan, Lebanon, Oman, Qatar, Syria, United Arab Emirates (UAE), and Yemen.

There are no prerequisites for this subcourse.

This subcourse reflects the doctrine which was current at the start of Operation Desert Storm. To supplement the data presented in this subcourse, we recommend the use of other sources (classified or unclassified) of information.

Unless otherwise stated, the masculine gender of singular pronouns is used to refer to both men and women.

TERMINAL LEARNING OBJECTIVE:

ACTION:	Identify procedures for recognizing the general characteristics and historical perspectives of Southwest Asia and the strategic significance of the region. Furthermore, you will identify the military capabilities, history, weather, terrain, and LOCs of Bahrain, Israel, Jordan, Lebanon, Oman, Qatar, Syria, UAE, and Yemen.
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CONDITION:	You will have access to extracts from CIA The World
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Factbook, DA Pam 550-24, DA Pam 550-25, DA Pam 550-34, DA Pam 550-47, DA Pam 550-183, DA Pam 550-185, [FM 34-72](#) (Coordinating Draft), [FM 90-3](#), and [FM 90-6](#).

STANDARD:

To demonstrate competency of this task, you must achieve a minimum of 70% on the subcourse examination.

**ACKNOWLEDGEMENT
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Special thanks go to The International Institute for Strategic Studies (IISS) for permitting us to use selected information of military organizations from IISS The Military Balance, 1990-1991.

NOTE: Refer to Subcourse [IS3008](#), Southwest Asia I, for similar information on Iran, Iraq, Kuwait, and Saudi Arabia. Military equipment of the above listed countries is presently contained in Subcourse [IS3008](#). However, we will transfer and update the equipment portion for Iran, Iraq, Kuwait, and Saudi Arabia to Subcourses IS3010 and IS3011. Additionally, we will include military equipment of most Northeastern and South and Southwestern Asian countries in IS3010 and IS3011 in the future.

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LESSON 1

SOUTHWEST ASIA - OVERVIEW

Critical Task: None

OVERVIEW

LESSON DESCRIPTION:

In this lesson you will learn basic background information on the general characteristics and historical perspectives of Southwest Asia and the strategic significance of the region to US interests and Commonwealth of Independent States orientation.

TERMINAL LEARNING OBJECTIVE:

TASK: Describe basic background information on the general characteristics, historical perspectives, and strategic significance of Southwest Asia.

CONDITION: Given access to extracts from CIA The World Factbook, DA Pam 550-24, DA Pam 550-25, DA Pam 550-34, DA Pam 550-47, DA Pam 550-183, DA Pam 550-185, and [FM 34-72](#) (Coordinating Draft).

STANDARD: Background information on the general characteristics, historical perspectives, and strategic significance of Southwest Asia will be in accordance with below listed references.

REFERENCES : The material contained in this lesson was derived from the following publications:

CIA, The World Factbook, 1997.
DA Pam 550-24.
DA Pam 550-25.
DA Pam 550-34.
DA Pam 550-47.
DA Pam 550-183.
DA Pam 550-185.
[FM 34-72](#) (Coordinating Draft).

INTRODUCTION

We are discussing the land and its physical features, the people and their languages, religions, and ways of life, as well as the impact of oil. Furthermore, we are providing a part on the history, which provides a perspective of Southwest Asia from the era when it served as a battleground for many would-be conquerors to the present, and the issues now confronting the independent Arab nations. Finally, we are considering the strategic significance of the region which has gained new importance, particularly as the result of the discovery and exploitation of major oil deposits during the past 55 years. This overview provides a base for understanding the fundamental characteristics of the region.

PART A: GENERAL CHARACTERISTICS

1. The land. Southwest Asia covers approximately 5,544,000 square kilometers (km²). The boundaries are defined to the north by the southernmost ridges of the Caucasus Mountains and the Caspian Sea, to the west by the Mediterranean Sea, to the south by the Gulf of Aden and the Arabian Sea, and to the east by the eastern border of Iran ([Figure 1-1](#)). Most of Southwest Asia is arid and flat and contains some of the largest and most barren deserts on earth. Many areas around the seacoasts, however, are mountainous and receive adequate rainfall for agriculture. Irrigation systems in the river valleys also provide for agriculture and sustain some of the most densely populated areas in the world.

a. Landforms. Geographically, Southwest Asia can generally be categorized into three zones: north, central, and south ([Figure 1-2](#)).

(1) The northern sector is a zone of rugged mountains connected to the Turkish-Russian Mountains on the west and to the Himalayas on the east. It is a tangled belt of ranges running generally east to west and encloses the extensive plateau of Iran. The highest peak, Mount Damavand (5,602 meters (m)) in the Elburz Range of northern Iran, is covered with snow in the summer as well as in the winter. Moist air from the Mediterranean and Caspian Seas flows into these mountain ranges and provides sufficient precipitation in the western area. The interior plateaus present striking contrast to the coastal plains, varying from semidesert to barren deserts of salt and alkali.

(2) The central zone is more complex. It extends from the coastal area of the Sinai Peninsula, through northern Arabia and south of the Iranian Plateau, and down to the lowlands along the Persian Gulf. The Persian Gulf and its basin represent an area that holds the world's richest known deposits of petroleum. On the whole, this sector is less climatically harsh than the northern and southern areas. The Lebanon Mountains along the eastern Mediterranean coast absorb most of the precipitation from the prevailing easterly winds. The Zagros Mountain Range of western Iran also absorbs some of this moist air leaving less precipitation for the Iranian Plateau. The interior areas vary from scattered evergreens and shrubs to grasslands and semidesert.

(3) The southern zone is the most uniform. The Arabian Peninsula rises from the southeast to the northwest. The Asir Range in western Saudi Arabia and Yemen are the mountains that parallel the Red Sea. Southern mountains also run along the coastal area of Yemen paralleling the Gulf of Aden. The Hajar Mountains of Oman on the eastern side of the peninsula are an extension of the Iranian Zagros Range. Except for the high mountains of Yemen and Oman, the southern area is generally the most barren land in Southwest Asia.

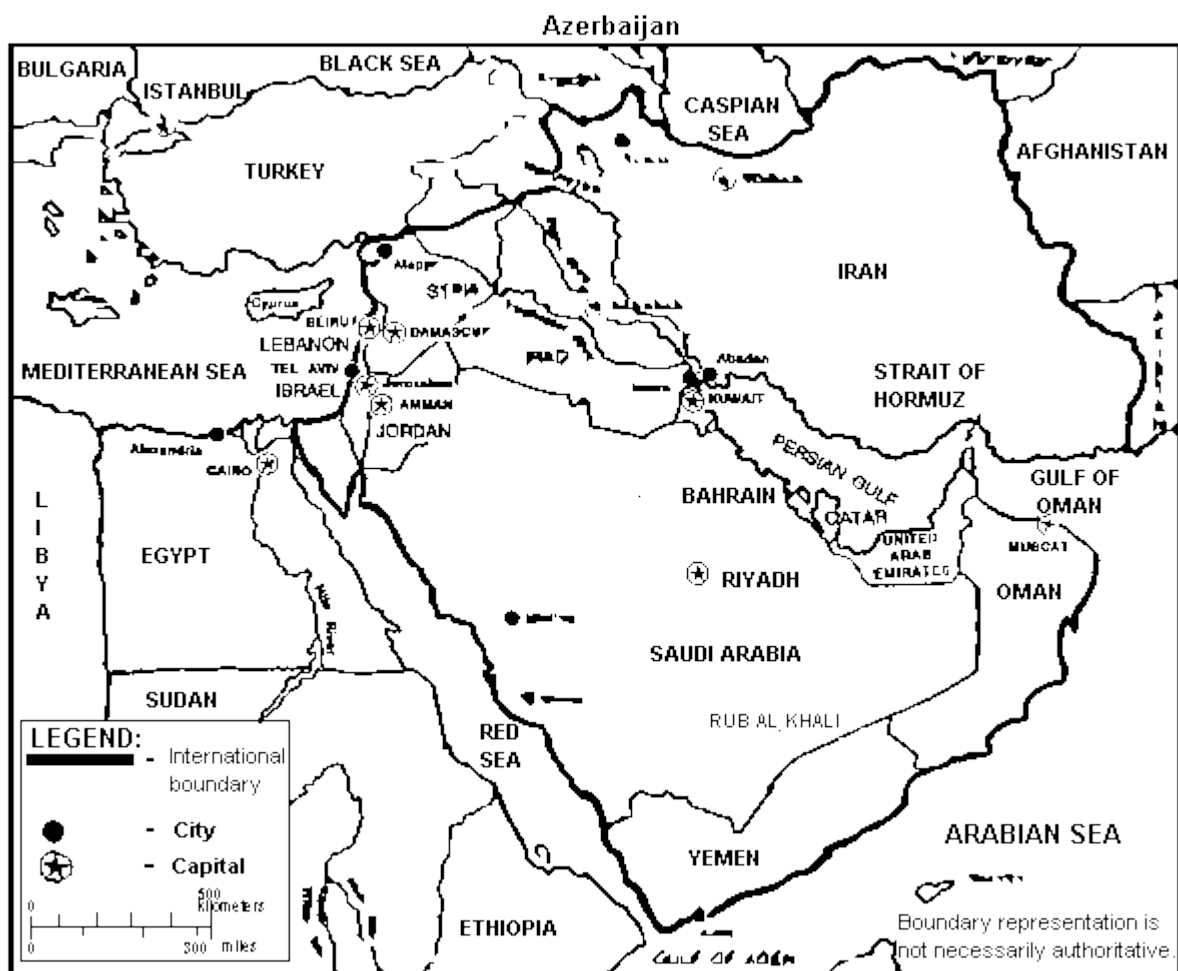


Figure 1-1. Southwest Asia

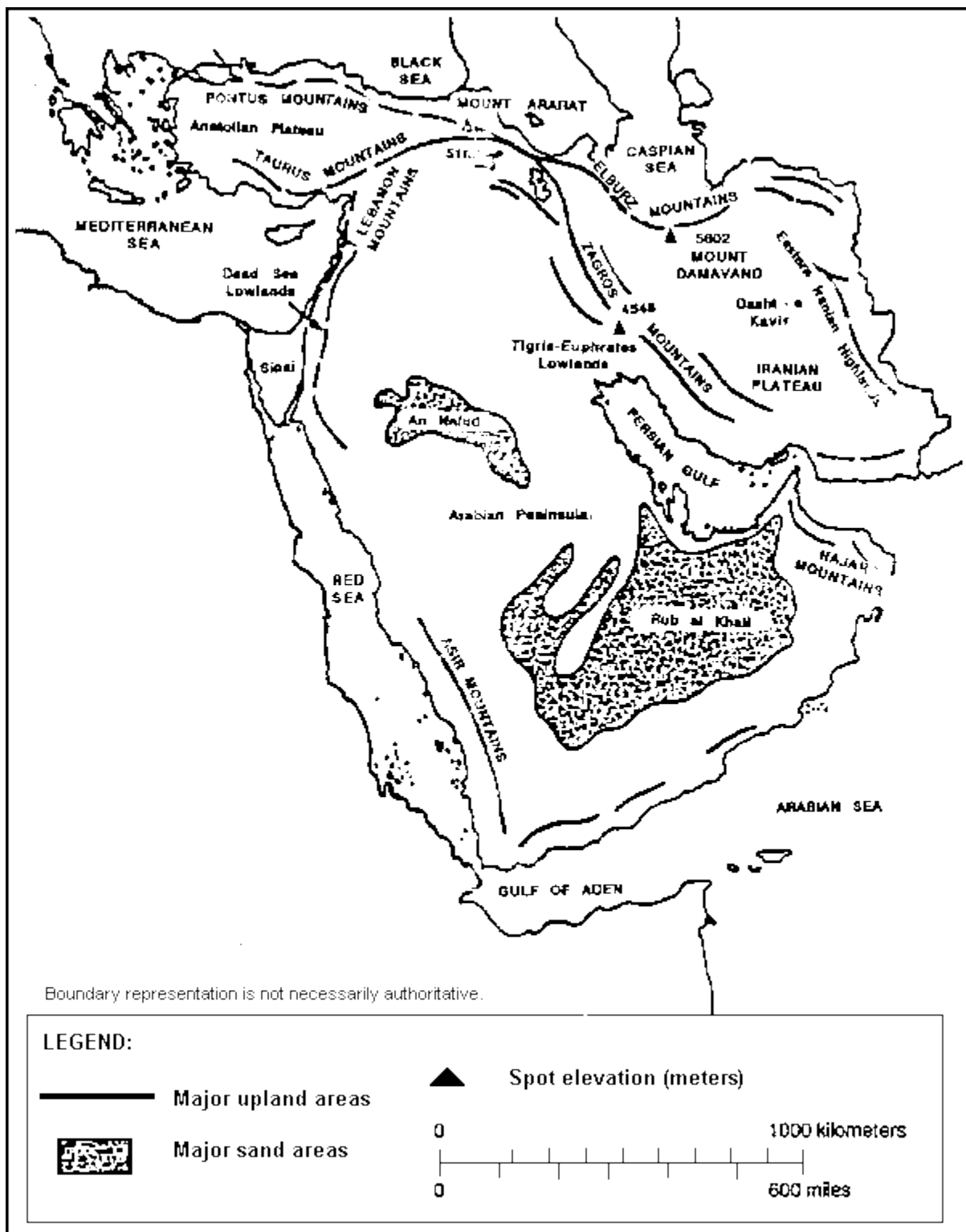


Figure 1-2. Landform zones.

b. Rivers. One major river systems traverses the Southwest Asia land mass: the Tigris-Euphrates, which flows from the north in a southeasterly direction through Syria and Iraq. The Tigris and Euphrates Rivers join at Al Qurnah, Iraq, about 193 km from the Persian Gulf, to form the Shatt al Arab (Waterway of the Arabs). Fed by rains and snows, this river valley provides favorable locations for human settlement and development ([Figure 1-1](#)).

c. Shorelines. In general, shorelines are rugged and dominated by cliffs or mountain ranges. Coastal plains are found along the Caspian Sea, the Persian Gulf, and the eastern Mediterranean.

d. Climate.

(1) Southwest Asia has a long, intensely hot summer and a mild winter. Temperatures vary with the location; but they may, as an example, climb to 45 degrees ($^{\circ}$) centigrade (C) in Saudi Arabia and Iran in the summer. Winter temperatures in Southwest Asia range from 4.5 $^{\circ}$ C in the north to 10 $^{\circ}$ C in the south. The temperatures in the higher mountains often drop below -17 $^{\circ}$ C in the winter ([Figure 1-3](#)).

(2) Many parts of the Middle East, especially along the shores of the Mediterranean and Caspian Seas, receive an annual rainfall of about 75 centimeters (cm) attributed mostly to winter rains ([Figure 1-4](#)). Inland, the average rainfall drops sharply. The northern countries receive about 25 cm and the plateaus about 8 to 10 cm a year. The southern and southwestern parts of Saudi Arabia lie in the monsoon zone and receive rainfall during the months of July, August, and September.

2. The people. The people of Southwest Asia have been classified as groups and subgroups based on physical type, language, religion, social order, means of livelihood, and national beliefs. However, any single criteria of classification can be misleading, since languages cross religious and social lines, and races cross linguistic and national boundaries. Since gaining independence, Southwest Asian people are now generally classified along nationalistic lines. Nevertheless, the criteria of languages, religions, and ways of life still do not necessarily correspond neatly with each nation's boundaries. For this reason, it is necessary to understand and appreciate these criteria.

a. Religions.

(1) Southwest Asia gave birth to Islam, and today it is the religion of approximately 90% of the area's population. Christianity and Judaism also originated in Southwest Asia; and there are significant numbers of Christians and Jews living there today -- approximately 6 to 8% Christians, 2% Jews, and 1% other. The religions of Southwest Asia are shown at [Figure 1-5](#).

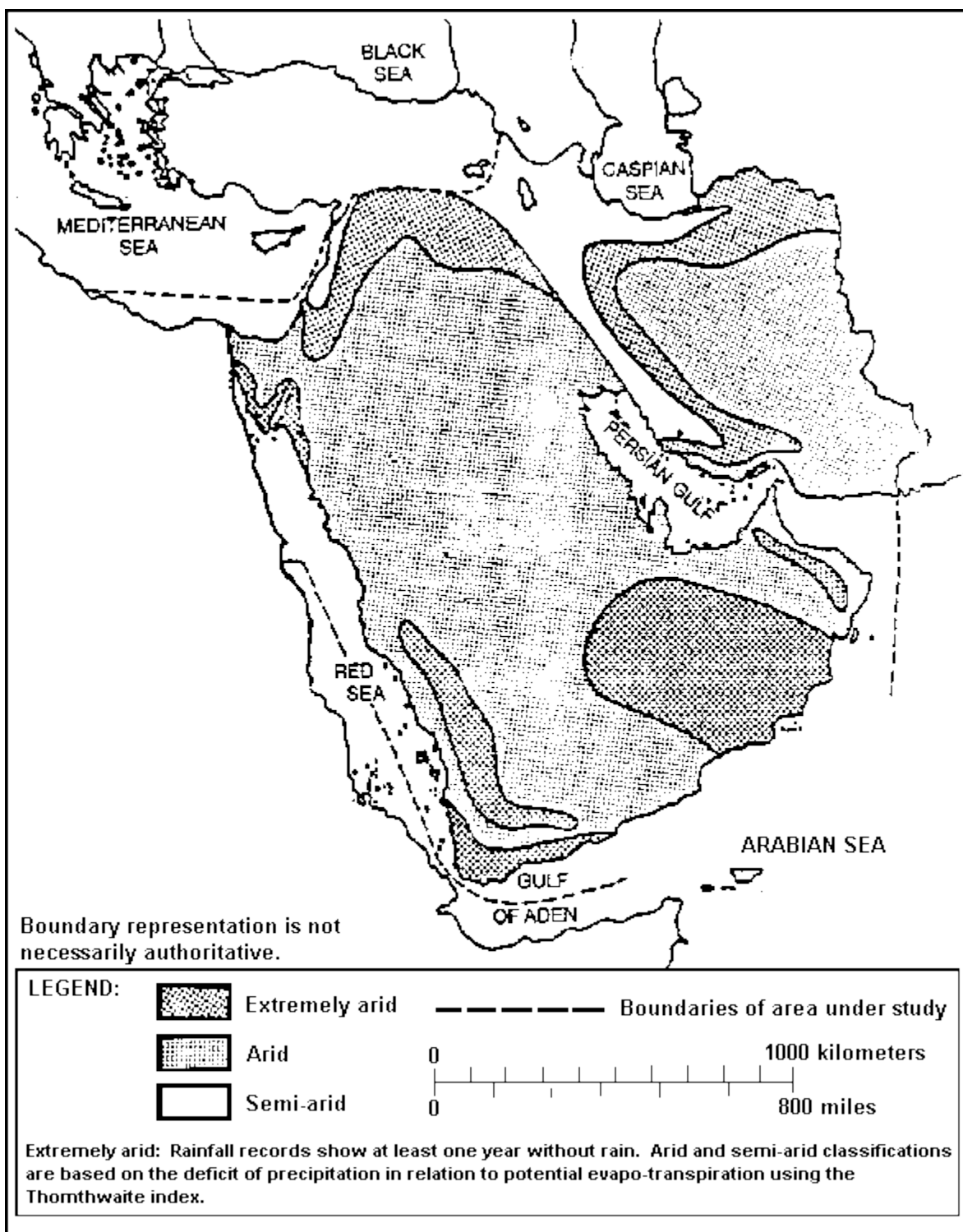


Figure 1-3. Climate.

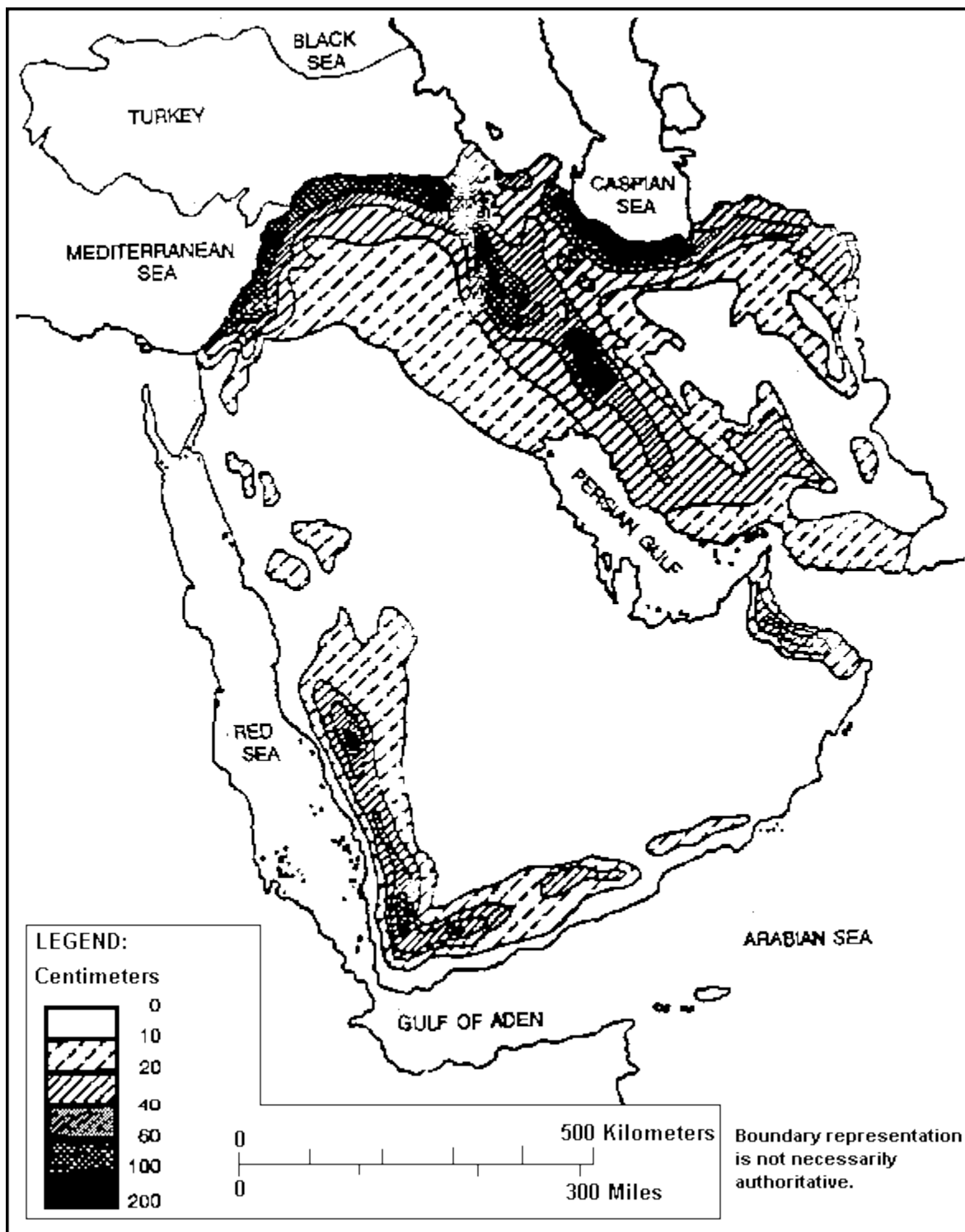


Figure 1-4. Rainfall.

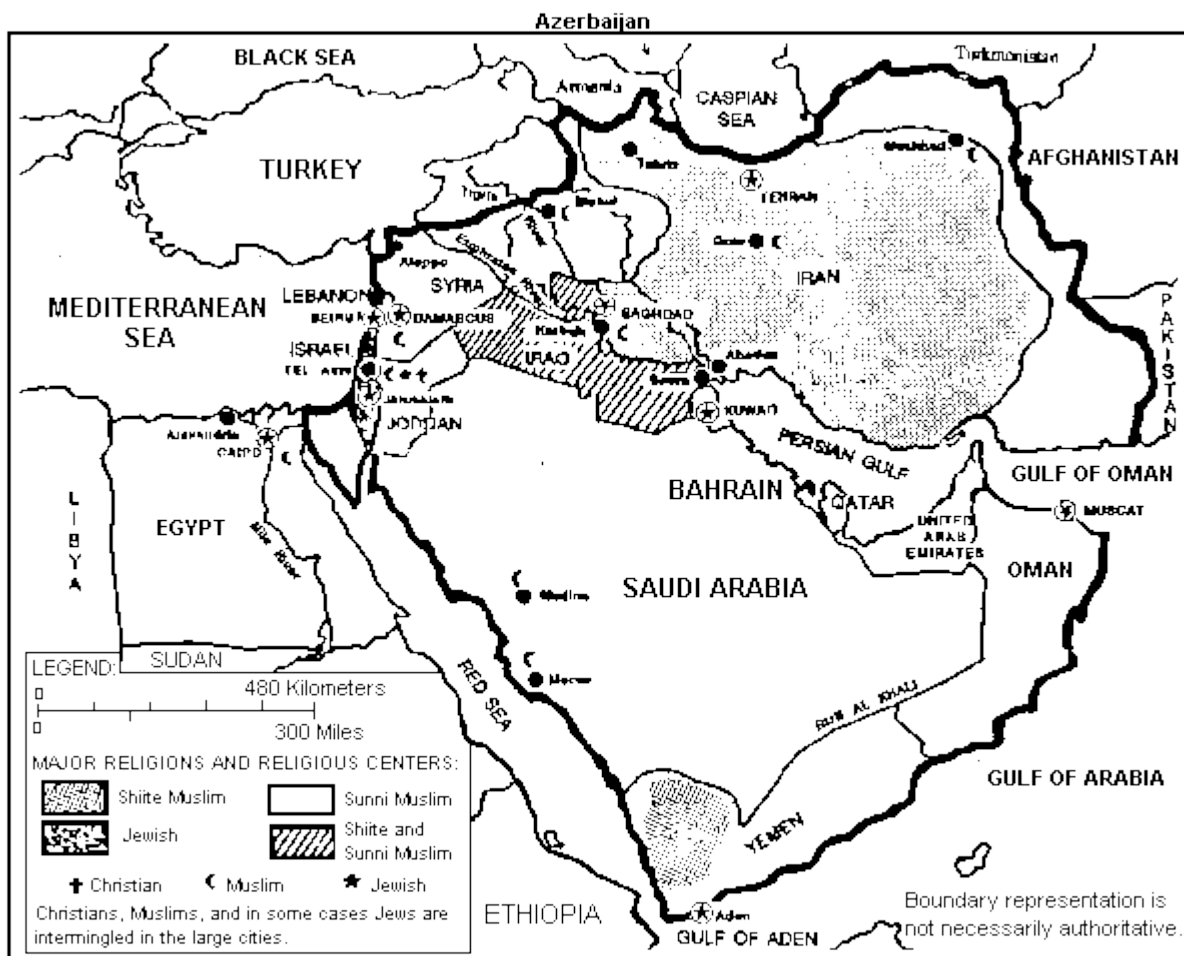


Figure 1-5. Religions.

(2) Islam is frequently but improperly known in the West as Mohammedanism, identifying it with the religion's founder and prophet, Mohammad. Islam had spread throughout Arabia by the time of Mohammad's death in 632 A.D. and continued throughout Southwest Asia in the following century. In 656 AD, a dispute arose over the issue of the rightful succession of Islamic leaders. This dispute led to the division of Islam into two rival sects: the Sunna or Sunni Muslims and the Shia or Shiite Muslims. Later, the Shiites split into rival subjects, the more common known as Shias or Shiites. Shiism has its own dissidents who became Ismailis, Alawites, Druze, and the Assassins. Although the Sunnis have remained more uniform in their beliefs, differences in interpretation of religious law, the Sharia, led to the adherence to one or the other of the four "schools of law": Hanefite, Malikite, Shafite, or Hanbalite. The Sunni division of Islam is predominant throughout Syria, Jordan, and Saudi Arabia. Shia is the state religion of Iran and portions of Yemen.

(3) Christian groups in Southwest Asia are the Greek Orthodox in Syria and Lebanon, the Armenian Orthodox in Syria and Lebanon, the Armenian Orthodox scattered through all the major urban centers in the western areas, the Syrian Orthodox, the Jacobites, and a small group of Nestorians. Roman Catholicism is principally

represented by the various Maronite, Greek Catholic, Coptic Catholic, and Syrian Catholic churches. The largest concentration of Roman Catholics is found in Lebanon and Syria, with the Maronite Church being the most important.

(4) Like Islam and Christianity, Judaism is monotheistic; that is, it supports the belief in one supreme being or God. Adherence to Judaism provides the basis for identification as a Jew and, particularly in Southwest Asia for identification with the country of Israel. As with Islam, fundamentalist Jewish groups seek to expand the role of religion in their society. While communities of Jews were found in most of the urban centers of Southwest Asia prior to 1948, the most significant body of Jews today is found in Israel where Orthodox Judaism prevails.

b. Languages.

(1) The major linguistic groups in Southwest Asia are Semitic and Iranian. Each of these groups, in turn, contains several distinct languages and an even larger number of dialects ([Figure 1-6](#)).

(2) Semitic languages originated in Southwest Asia and are spoken by the majority of the area's population. Arabic, a semitic language, spread from the Arabian Peninsula during the Arab conquests that followed the rise of Islam in the seventh century. The Koran (Quran), the Islamic bible, standardized literary Arabic; but the spoken language splintered into many dialects. Arabic-speaking people probably constitute 55% of the Southwest Asian population. The major Arabic dialects are generally referred to as Syrian, Iraqi, and Arabian. There are, however, extensive variations in grammar, vocabulary, and pronunciation within each of these subgroups.

(3) Farsi (Persian) is the language of the largest number of Iranians and is the official language of Iran. Although not considered part of the Semitic language group, it is written in a modified Arabic script. Other languages of this group are Kurdish, spoken in Iran and Iraq, and Baluchi, also spoken in Iran.

(4) Hebrew, which at one time virtually disappeared as a living language, was revised and modernized by Jewish settlers in Palestine. It is now the official language of Israel.

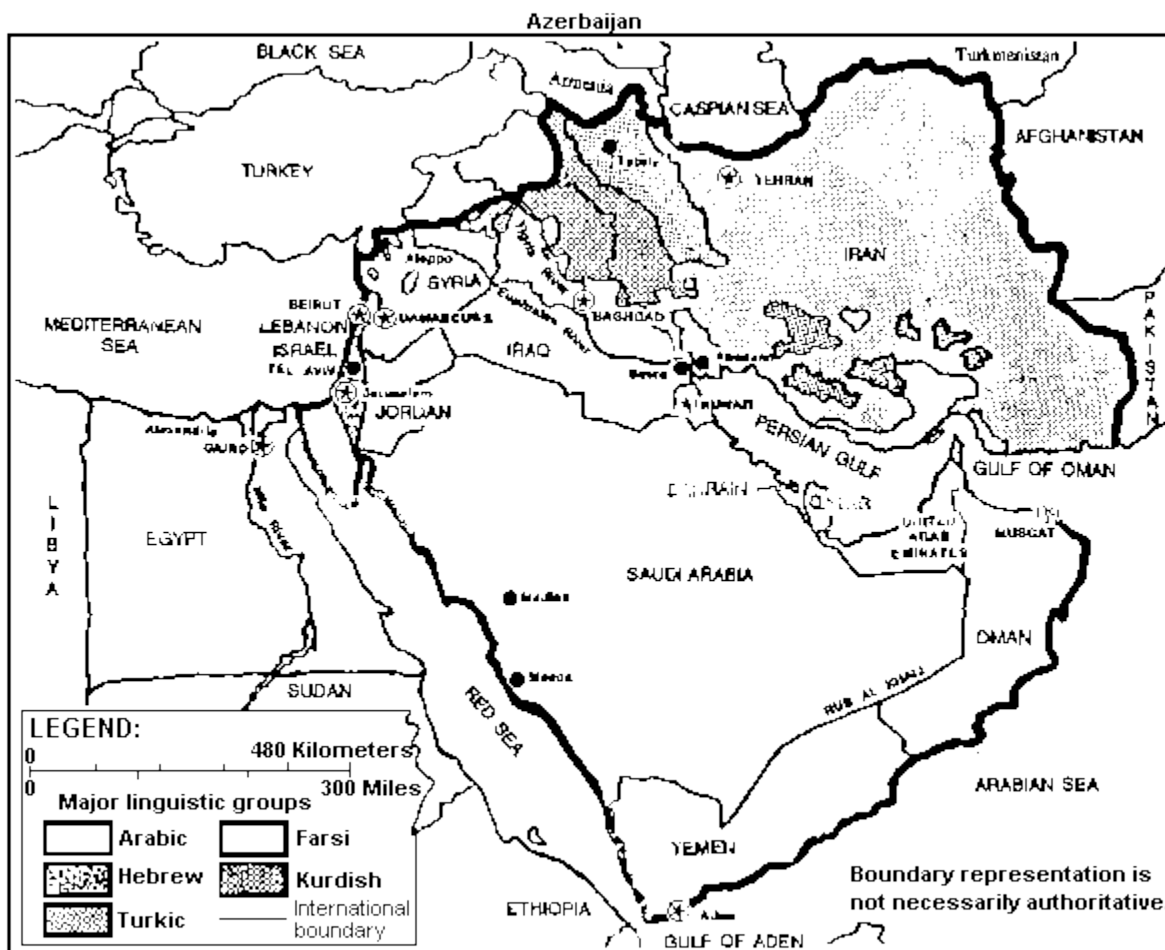


Figure 1-6. Languages.

c. Ways of life.

(1) Traditionally, Southwest Asia has been divided into three life styles: those of the nomadic herdsmen, the farmers, and the city dwellers. The ancient social structure of life styles has been significantly altered in modern times.

(2) Prior to independence, modernization emerged as the result of military intervention, economic and political influences, missionary activity, educational institutions, and formal programs of change and development that were established by Europeans or Americans and instituted by various heads of state. Since independence, the national modernization process has continued more extensively in the oil-rich countries of Southwest Asia. The comparison of modernization to traditional elements varies considerably from one country to another. Relatively large westernized elements exist in Lebanon, and Israel and within the small modernized elite in the oil-producing countries.

(3) Despite this process of modernization, a constant struggle continues between the modernizers and the traditionalists in each of the countries. The religious institution has been progressively overshadowed by political authority. Education and economic development have expanded opportunities and have altered family unity. These and other factors have caused an expansion of the middle class. This has resulted in the

shifting of power away from a small segment of the upper class and in the transfer of control of major economic resources and wealth to middle class dominated governments. Modernization has not, however, won out over traditionalism. In many parts of Southwest Asia there are signs of religious assertiveness. Some fundamentalists are challenging contemporary regimes and calling for a return to ancient society. Others advocate a greater involvement of Islam in the political and social structures of the nation.

d. Population. The population of Southwest Asia is distributed unevenly over the region. Given the extreme aridness of large parts of the landscape, the relative availability of water tends to determine the pattern of population density. The valleys of the Tigris and Euphrates Rivers are heavily populated. Also of importance are the highland areas and adjacent plains which receive sufficient rainfall to maintain extensive agricultural centers. Coupled with the normal increase in city populations, the movement from the rural areas has resulted in a tremendous expansion of urban centers over the past 30 years ([Figure 1-7](#)).

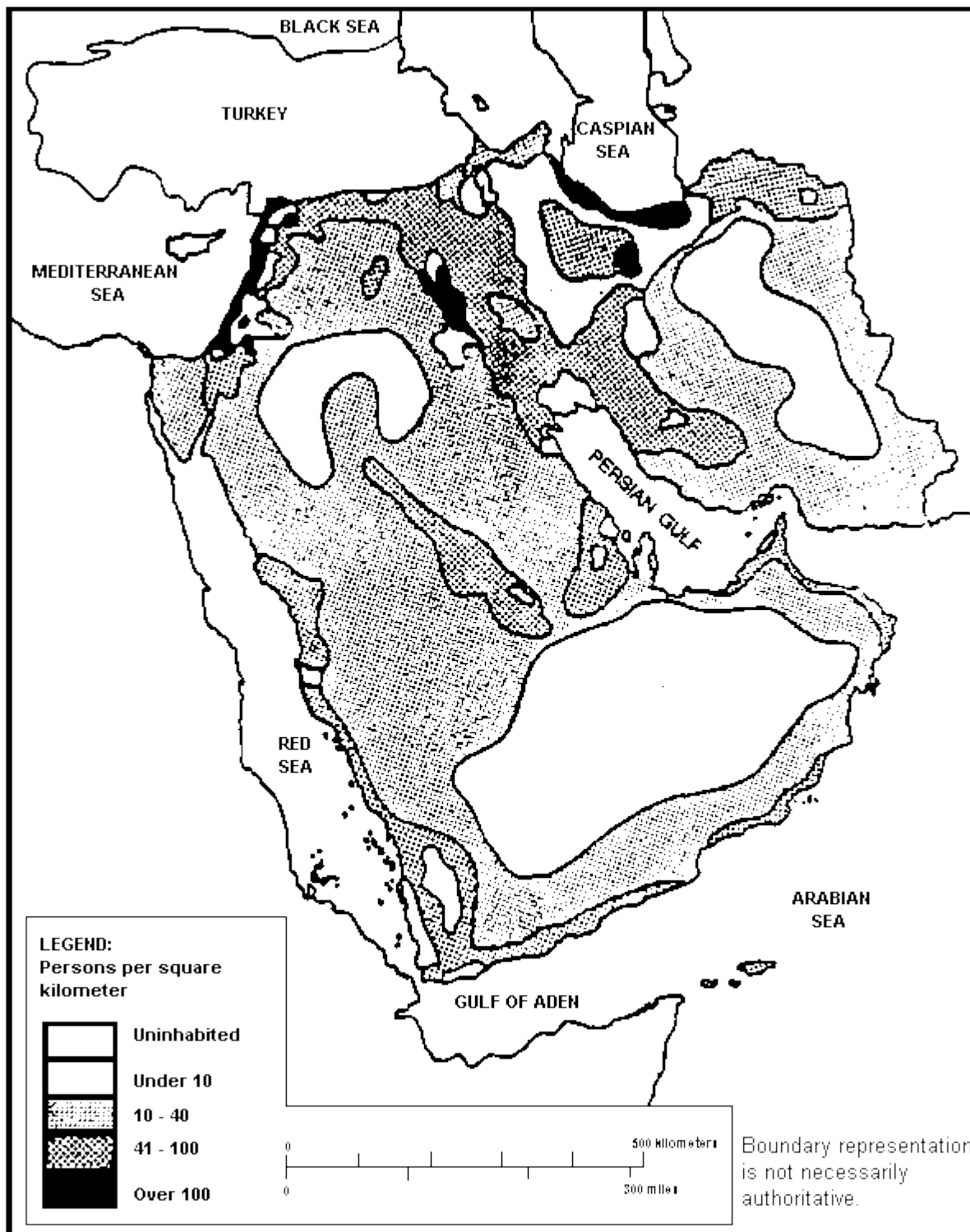


Figure 1-7. Population density.

3. The economy. Throughout its history, Southwest Asia has been dependent on agriculture for its economic survival. This situation was altered considerably during the second half of the 20th century when the oil industry expanded substantially and became the single most important factor in the economy of Southwest Asia. The large petroleum fields in Iran, Iraq, Saudi Arabia, Kuwait, Bahrain,

Oman, Qatar, and UAE have about two thirds of the world's known oil reserves. In addition, modest oil discoveries were made in Syria and Yemen.

a. For many years the development of Southwest Asian oil resources was accomplished by European and US companies which held the concessions and provided the capital for production. This included control over the exploitation, rates of development, production schedules, and pricing of oil. In 1960 the Organization of Petroleum Exporting Countries (OPEC) was formed by the oil-producing countries of Southwest Asia and by Venezuela in an effort to increase their bargaining power with the oil companies. Following the Arab-Israeli War of 1973, the OPEC governments assumed control of the industry, including the setting of prices and rates of production. In most cases, oil production was nationalized. Obtaining a greater share of the revenues was a major factor in the drive for control by the oil countries. The revenues derived from this major industry have been devoted to modernizing the oil-producing countries and have been used as a means for investing in the economies of the Western nations. This allocation has created an imbalance in the area's economy, both regionally and within individual countries. Several nations of Southwest Asia have little (Syria and Yemen) or no oil (Israel, Jordan, and Lebanon) wealth; others have extensive wealth derived from the production of oil products. Within the oil-rich countries, two distinct economies exist: a highly developed oil industry sector, and a marginal sector of farmers, unskilled workers, and minor industries. A concerted effort is being made to lessen these imbalances and to develop diversified economies. Furthermore, the sharing of wealth between the "haves" and the "have-nots" is necessary to promote the economic growth and political stability of Southwest Asia.

b. The ever-increasing demand for oil and the subsequent flow of wealth have given the oil-producing nations of Southwest Asia significant world political and economic leverage. The US is partially dependent on Southwest Asian oil, and Europe and Japan have established almost total dependence. The Russians have shown an increasing interest as well. Holding the majority of the world's proven oil reserves makes Southwest Asia of major concern to all industrial nations.

4. Strategic waterways. Much of the strategic importance of Southwest Asia has been tied to its international waterways. The seas and gulfs which intrude deeply into the landmass of Southwest Asia have been routes of trade, transport, and military operations for centuries. Control over the narrow straits that connect the waterways with each other and with the oceans is a matter of international concern ([Figure 1-8](#)).

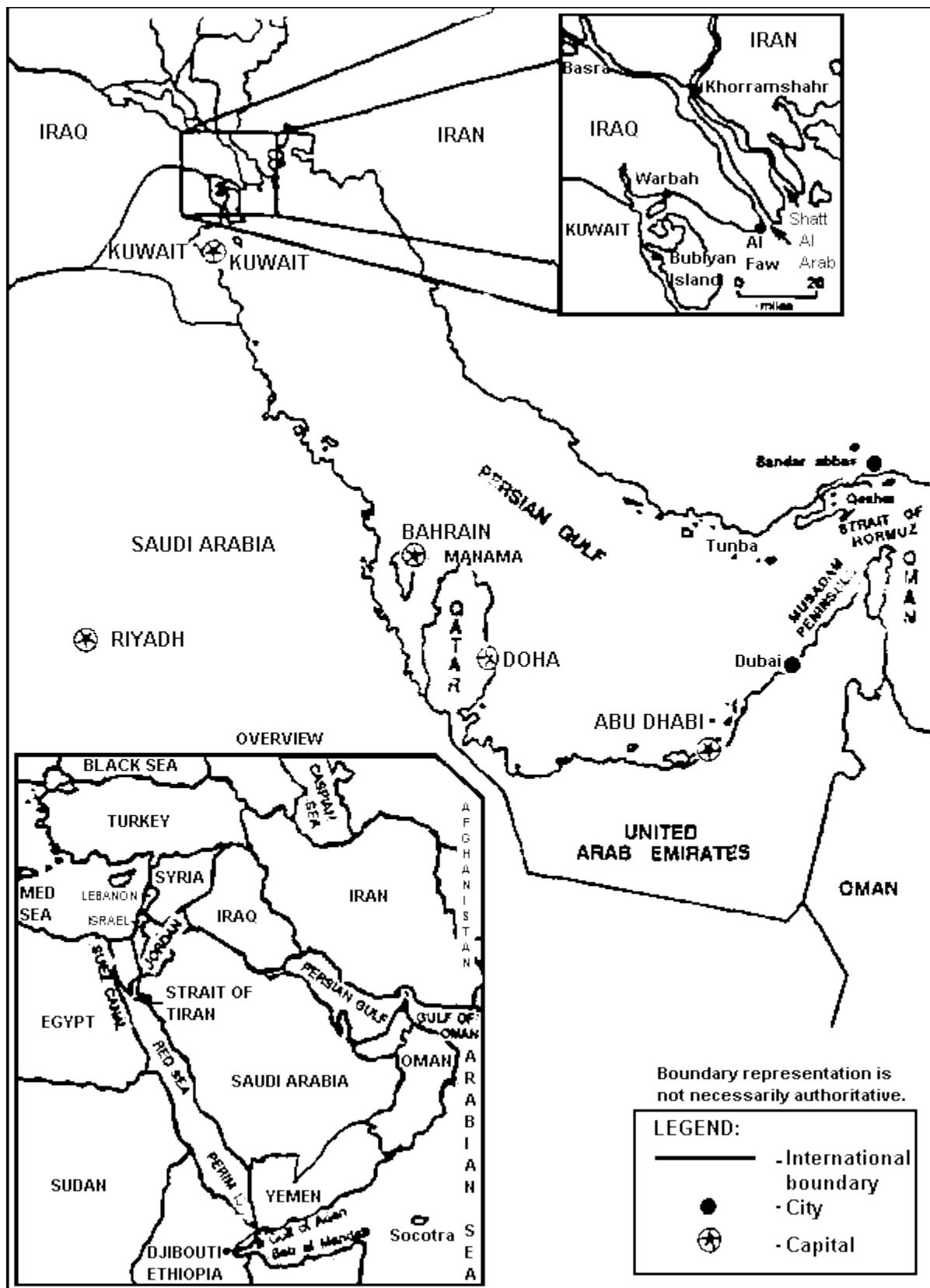


Figure 1-8. Strategic waterways.

a. The Mediterranean Sea lies between Europe, Asia, and Africa with the Strait of Gibraltar connecting the western Mediterranean with the Atlantic Ocean. In the southeast, the Suez Canal

allows ships to sail from the Mediterranean into the Red and Arabian Seas and the Indian Ocean. The Mediterranean reaches its deepest point (4,594 m) in the Ionian section south of Italy; it is about 300 m deep at the Strait of Gibraltar. This has been an important avenue for cultural and commercial exchange between Southwest Asia and the Western world for many years. Today, oil-consuming nations rely on the international waters of the Mediterranean for movement of petroleum from the pipeline terminals of Southwest Asian countries. The US and other aligned nations have naval fleets operating in this important area on a year-round basis.

NOTE: The former USSR also had a naval fleet in this area, however, the USSR was abolished in December 1991. This country is presently referred to as the Commonwealth of Independent States (CIS). The Independent State of Russia will probably take over the former Soviet Navy. The future strategy of the CIS or Russian Navy remains to be seen.

b. The Arabian Sea lies between Arabia and India and is considered part of the Indian Ocean. It is bordered by Iran and Pakistan on the north. The Red Sea, Gulf of Aden, Persian Gulf (Arabian Gulf to the Arabs), and Gulf of Oman are considered extensions of the Arabian Sea. Several islands in the Arabian Sea are used as naval and air bases. Socotra, a possession of Yemen, had been a port of call for the former Soviet Navy. Masirah Island off the coast of Oman presently serves as an Omani military base, and the US has access to the Masirah air base facilities. The US has similar access to the Omani mainland port of Salalah for its naval vessels.

c. The Red Sea separates the Arabian Peninsula from Northeast Africa. It is about 2,253 km long and is no wider than 354 km. It has an average depth of about 600 m and covers 433,462 km. Large reefs, which are present except in a center channel in the southern half, make the sea dangerous for vessel navigation. The shore is barren with high mountain ranges on the east. Low sand hills and rocky tablelands line the west coast which is bordered by many coral reefs.

d. The Persian Gulf separates Iran from Arabia. It is connected to the Gulf of Oman by the Strait of Hormuz. The gulf is about 805 km long and 370 km wide at its widest point. The principal islands in the gulf are the Bahrain Group and Qeshm. The Persian Gulf is one of the largest and oldest sources of the world's pearl supply and ranks as one of the principal oil-exporting areas.

e. The Suez Canal is the longest restrictive waterway in the area. It is about 160 km long and flows from the upper Red Sea into the eastern Mediterranean. The canal is located entirely within Egypt and is owned by the Egyptian Government. The two excavated sections of the canal are separated by the Great Bitter Lake and Lake Timsah. The Ismailia Canal joins the Suez at Ismailia and runs westward into the Nile. The Suez Canal is the most convenient and rapid water route between Europe and the East.

f. The Strait of Tiran marks the junction of the Gulf of Aqaba with the Red Sea. Although of little importance to world shipping, it is vital to the interests of Israel and Jordan whose southern ports lie at the head of the gulf. The Israeli port of Eilat serves as a terminal for a pipeline which transports oil to the Mediterranean. Enterprise Passage, the only safe channel, is about 1.2 km wide and can be controlled easily from either Sinai or Tiran Island. Egyptian occupation of Tiran Island on 1 Jun 67 was the final straw for Israel. It directly resulted in Israeli decision to attack the Arabs on 5 Jun 67.

g. The Strait of Bab al Mandeb is located at the southern end of the Red Sea. It is bordered by Yemen on the east and Djibouti on the west. The strait is divided into two channels by Perim Island, a 13 km² rock belonging to Yemen. The western channel has a width of 16 km and is the main route for transiting ships. The western channel is considered an international waterway and is governed by international law. The Strait of Bab al Mandeb, along with the Suez Canal, is important to world shipping and provides the most direct route from the Mediterranean Sea to the Indian Ocean. The Soviets operated a naval base at Aden on the southern coast of Yemen; in 1989-90, the Soviets began withdrawing from Aden. Across the Gulf of Aden, naval facilities at Berbera, Somalia, serve as a base for the US Navy.

h. The Strait of Hormuz lies at the southern end of the Persian Gulf and is bordered by Oman on the west and by Iran on the east. The 274 km strait averages about 80 km in width from Oman, around the tip of the Musandam Peninsula, and broadens to about 129 km at the Tunbs Islands in the Persian Gulf. Iran located its Silkworm antiship missile batteries around Hormuz (in 80 km range from Oman). Oil tankers, which make up most of the traffic through the strait, carry about 50% of the world's oil requirements. The Strait of Hormuz is a chokepoint at which shipping from the Persian Gulf could conceivably be blocked at any time. Because the strait is too deep and wide to be blocked by sunken ships, naval and air power would be required to close it. As an international waterway, closure would impact severely on the world market. It would curtail oil shipping from Kuwait, Bahrain, Qatar, and the United Arab Emirates (UAE).

i. Relatively good port and air facilities exist throughout Southwest Asia. The international waterways discussed earlier provide avenues for surface movement from all parts of the world to Southwest Asian countries. Air facilities have expanded significantly and have become another major means of transportation. Air travel is available within all major zones of the world and Southwest Asia. Ports and air facilities are discussed in more detail in the respective country chapters. The approximate travel distances from various parts of the world to Southwest Asia are shown at [Figure 1-9](#).

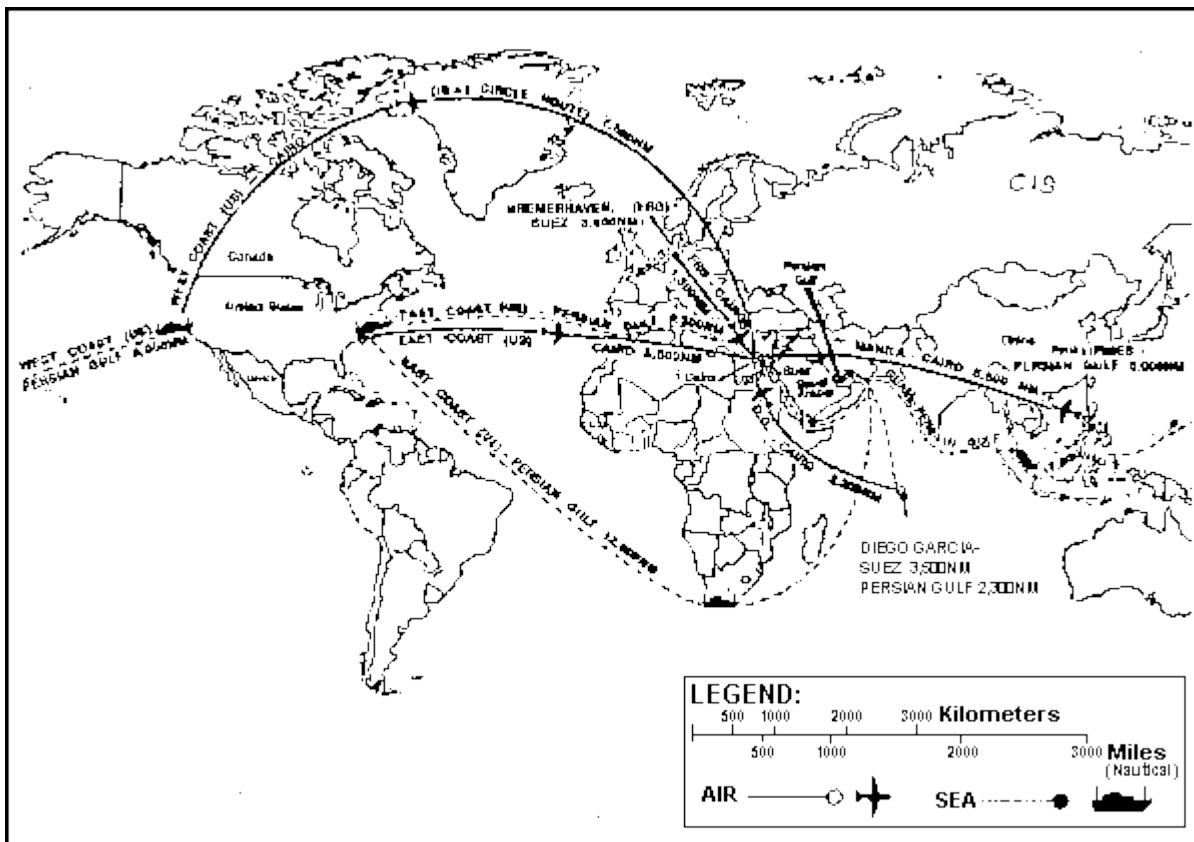


Figure 1-9. Travel distances.

PART B: HISTORICAL PERSPECTIVE

1. Early development. Southwest Asia was among the first areas of the world to develop civilization. Many empires sought control of the area because of its important location. It became a battleground from 3100 to 2500 B.C. when Egypt and Mesopotamia ruled the entire region. The area was dominated in turn by the Assyrians (910-612 B.C.), the Persians (539-331 B.C.), the Romans (200 B.C.-100 A.D.), and again by the Persians (200 A.D.). The Arab conquest occurred in 630-640 A.D. and was followed by the arrival of the first European Crusaders in 1097 and the revival of Arab power in 1200. Mongol devastation of the region followed in the 1200s. The Ottoman Turks then ruled the region from the 1500s to the early 1900s.

2. Western influence.

a. With the outbreak of World War I came the disintegration of Ottoman control of Southwest Asia and the expansion of European influences. The Turks joined the side of the Central Powers (Germany and Austria-Hungary) in hopes of regaining and controlling some of the lost Ottoman provinces. Meanwhile, the Allied Powers (Britain, France, and Italy) encouraged the Arabs to revolt against Turkish rule by promising them independence.

b. The majority of World War I fighting in Southwest Asia took place in the Arab provinces of the Ottoman Empire. Arab nationalists rose in revolt against the Turks and sought the aid of the

British. The British responded with military and financial aid, along with promises of independence after the war. At the same time, however, the British were concluding secret treaties with their French, Italian, and Russian allies for the division of the Ottoman Empire. They were also negotiating with the leaders of the Zionist movement on the Palestine issue. In 1917 Britain issued the Balfour Declaration supporting in principle a national homeland in Palestine for the Jewish people. Post World War I peace settlements established a mandate system of British and French rule in preparation, it was promised, for eventual self-government in the conquered Arab provinces. Only in the Arabian Peninsula was Ottoman rule replaced by independent Arab governments. Initially, the Arabs in Syria and Iraq resisted the mandates but were forced into submission.

c. At this point of Southwest Asian history, with virtually the entire area under direct or indirect foreign rule, nationalist forces began to reverse the tide. Turkish nationalists defeated foreign and domestic opponents, forced the allies to negotiate a new peace treaty, and established a nationalist, secular republic. Persia (later renamed Iran) refused to ratify the British treaty of 1919. A military coup in 1921 overthrew the Persian ruler and instituted a strongly nationalistic and modernizing regime -- the first shah of the Pahlavi Dynasty of Iran.

d. From about 1927 to 1935, a temporary calm prevailed between Southwest Asian nationalism and European imperialism. Young Arab nationalism had failed to eject the "imperialists" and was therefore compelled to accept European control of Arab internal affairs. Although the imperial powers had conceded independence to Turkey and Iran and allowed the exercise of self-government by the Arab-speaking successor states of the Ottoman Empire, this was done with varying degrees of safeguard for the strategic and economic interests of the imperial powers. Southwest Asia ceased to be a major source of international tension during this period except for Palestine where Jewish-Arab rivalry led to the start of violent outbreaks. In 1938 the British Government sought a settlement of the Palestine problem through a conference with the Jews, Palestinian Arabs, and representatives of other Arab states. In this time period, the advancing menace of war in Europe preoccupied the concerns of Britain. When the conference ended in a deadlock, the British issued a White Paper promising independence for Palestine in 10 years and limiting Jewish immigration to Palestine. The Jews denounced the White Paper as incompatible with the Balfour Declaration and the Palestine Mandate of 1917. World War II, however, pushed this issue aside until 1948.

3. Post-World War II developments.

a. During World War II the majority of the Arab countries displayed little enthusiasm for active participation in the war, preferring to remain neutral. Those countries which did declare war on the Axis powers did so only after the identity of the victors was evident. The Southwest Asian states, perceiving that this was not their war, continued to attach primary concern to gaining independence.

b. By the end of World War II, virtually all of Southwest Asia had formal independence, but the British still had significant economic, political, and military influence in a number of Arab states. It was not until a new wave of more radical revolutionary governments, often led by the

military, overthrew the conservative parliamentary and monarchical regimes that the special position of the British ended. Just after World War II the Palestinian issue came to a head. In 1947 the British turned the Palestinian problem over to the United Nations (UN). A UN special committee recommended ending the British mandate and partitioning Palestine into an Israeli and an Arab state. Although the majority of Arab countries rejected any idea of partition, the proposal obtained the necessary two-thirds majority in the UN General Assembly. As British forces were rapidly withdrawing in 1948, the Palestinian Arabs and the Israelis became locked in guerrilla warfare. The Palestinian Arabs were no match for the largely European-trained Jews, who not only gained independence for Israel, but ended up with more land than the UN had negotiated.

c. A major outgrowth of the Arab-Israeli conflicts, and one of the most persistent problems that has continued to the present, is that of the Palestinian refugees. With no land to call home, they have been displaced throughout various countries in Southwest Asia in refugee camps.

Militants among the refugees have formed guerrilla and terrorist groups known collectively as the fedayeen "men of sacrifice." Their primary goal is to prevent Israel and the Arab countries from negotiating a peace settlement that does not provide for a Palestinian homeland.

4. Patterns of conflict. Since the beginning of the 20th century, there have been wars, revolutions, and other forms of armed conflicts involving the countries of Southwest Asia. Prior to 1945 conflict took the form of world wars and the Ottoman suppression efforts. Since 1945 at least 20 conflicts have occurred: 15 between Southwest Asian nations and 5 internal struggles. These figures do not include the numerous terrorist actions which have occurred in Southwest Asia, and those outside Southwest Asia which have involved Southwest Asian terrorists.

5. Current issues.

a. The history of Southwest Asia for the past 30 to 40 years has been dominated by certain major issues. The Arab-Israeli conflicts, with the participation of the majority of the surrounding Arab nations, have persisted throughout this period. Encouraging developments in the quest for peaceful solutions came about during the Camp David accords between Israel and Egypt. The contest for leadership of the Arab world and the search for some form of Arab unity has been effective only when the internal affairs of the individual nations have appeared to be affected by outside influences. Otherwise, the Arab nations have had little success in unity and have even resorted to warring among themselves on occasion. The rivalry between the former USSR and the West for influence in the area has placed this strategic crossroad of the world in the forefront of international tension. Several Arab nations have openly sided with the former USSR, while others sought to seek the aid and attention of the US.

b. Despite this changing pattern of superpower friendship, the Arab nations have pursued the elimination of foreign bases, economic concessions (particularly concessions to foreign petroleum companies), and other special privileges. The creation of systems of government best suited to providing political, economic, and social progress without the destruction of religious and national heritages has been challenged. Some fundamentalists prefer a return to ancient Islamic society, while others advocate a greater involvement of Islam in the political and social

structure. Overshadowing many of these current issues is the subject of how the oil producing nations of Southwest Asia will employ their petroleum resources to achieve their economic, political, and social goals. Because of the importance of all these issues to the entire world, it is likely that Southwest Asia will continue to remain a focus of international attention for years to come. The Gulf War 91 and subsequent US/former USSR sponsored peace conferences bring optimism to the Arab-Israeli and to the Palestinian problem.

PART C: STRATEGIC SIGNIFICANCE

1. Strategic importance. Almost since the beginning of Western civilization, Southwest Asia has been of fundamental strategic importance. It has been, particularly in the second half of the 20th century, of paramount economic importance to the world because of its vast oil resources. Bitter political disputes that have led to several regional wars have kept the area in constant turmoil and have threatened the peace of the world. Issues of the past 30 to 40 years have evolved around access to the oil regions, the Arab-Israeli conflicts, and the pressures of the international system caused by the rivalry of interested powers. The single most obvious and worrisome issue, however, continues to be access to Southwest Asian oil.

2. US interests. The US is vitally interested in the future of Southwest Asia. Despite some success in conservation measures and reduced imports, the US continues to remain dependent on foreign energy resources and primarily on oil generated by the OPEC countries. The centerpiece of this organization is Saudi Arabia, by far the principal provider of US oil and the country which holds about 25% of the world's total proven reserves. The US Congressional Budget Office has estimated that the loss of Saudi Arabian oil for one year would reduce the gross national product (GNP) of the US by approximately \$300 billion, increase our unemployment rate by 2% and radically accelerate US inflation. It would also impact severely on the economies of Europe and Japan. For these reasons the US and its allies have a vital strategic and national interest in the oil-producing countries of Southwest Asia. On the other hand, these countries recognize that their oil deposits will not last forever and that the continued strength and health of the Western economies are essential to the health of their own economies. The relationship between these countries and the US will also continue to be heavily based on their access to US technology and to those US citizens who can assist them in modernizing their societies. The presence of approximately 35,000 American citizens in Saudi Arabia testifies to the extent of this relationship.

3. Implications of destabilization.

a. The security relationship of the US to the Southwest Asian countries is based on the acceptance that each country is sovereign and independent. Cooperation between various countries in Southwest Asia and the US has been affected by issues in which differences of opinion exist among the US, CIS, and the nations of Southwest Asia. These issues have caused destabilization implications in the area.

b. Foremost among such issues is the establishment of a just and lasting settlement of the Arab-Israeli conflict. Progress in this peace process has been slow. In 1979 Egypt negotiated directly

with Israel and signed a treaty of peace that has been partially implemented. Many Arab leaders, while reluctant to consider full diplomatic relations with Israel, openly talk of peace agreements. Jordan is prepared to recognize Israel and to agree to direct negotiations, but Jordan is concerned with the future of the West Bank. Syria also talks about peace, but is concerned about the Golan Heights annexed by Israel and Israel's reluctance to leave Lebanon. Lebanon is willing to deal directly with Israel but must first find a solution to the struggles within its own borders. Overshadowing all of these concerns is the issue of Palestinian participation in the peace process. In December 1991 Jordan and Syria started negotiating with Israel per US/CIS brokered peace conference. Lebanon has achieved some measure of stability by virtue of Syria disarming the militias; peace talks have begun in Lebanon.

c. The future of the Palestinians may be the most difficult problem to solve in the Arab-Israeli conflict. One factor that makes this issue so complex is that the Palestinian people are scattered throughout Southwest Asia. A second complicating factor is disagreement over a spokesman for the Palestinians. A third factor concerns the appropriate role of the Palestinian Liberation Organization (PLO) in future peace talks. The PLO has yet to recognize Israel and has not accepted the right of self-determination for all Palestinian people. A final factor is the military defeat of the PLO at the hands of the Israelis in Lebanon and so the loss of a focal point for PLO leadership. The Palestinians have been represented at the peace talks with Israel. Arafat of the PLO has indicated he is willing to recognize Israel and he is willing to negotiate directly. The problem is Israel's unwillingness to talk to the PLO.

d. The Iranian revolution introduced to Southwest Asia the turmoil of a troubled country and the impact of militant Islam. The bitter results of this revolution may linger between the US and Iran for some time. Efforts to keep Iran from adopting communist ideology will inevitably dominate future US policy toward that country. The importance of Iran's location in proximity to the Soviet and Afghanistan borders and the Strait of Hormuz is of vital concern to US interests.

e. The conflict between Iran and Iraq began in 1980 and stems from a territorial dispute over land boundaries between these two neighboring countries, ideological differences, personal hatred between the leaders, and competition for regional prominence. The war between these two major oil producers threatened to destabilize the region. This conflict continued through August 1988 when a cease fire was signed, but no peace settlement has yet been achieved. In August 1990 Iraqi troops occupied Kuwait. The United Nations urged Iraq to leave Kuwait by mid January 1991, but to no avail. US and multi-national troops were rushed into Saudi-Arabia in response to an urgent request from the rulers of Saudi-Arabia and Kuwait. After thousands of bombing raids onto Kuwait and Iraq the ground war started which ended in the US and multi-national forces victory. Kuwait was liberated, but the situation in Iraq is still unstable.

4. Soviet orientation. Soviet intervention in modern Southwest Asian history stemmed from the World War II (WWII) era with its attempts to regain borderlands from Iran that were rebuffed by the US through the Truman Doctrine. The Soviets occupied the five northern provinces of Iran during WWII. After the war, the Shah tricked the Soviets into withdrawing and they were afraid of US/UK intervention should they attempt to reoccupy. After Khrushchev came to power, Soviet policy gradually

became oriented to more active support of various Southwest Asian nationalist regimes and to siding with the Arabs in their conflict with Israel. An underlying factor in former Soviet interests has always been a desire to cutoff NATO access to the oil and to secure warm water ports, not only for trading purposes but to support the ever-increasing and widely dispersed former Soviet Russian navy fleets. The invasion of Afghanistan by the Soviets was interpreted as the first stage in a new era of Soviet involvement in Southwest Asian affairs. As previously stated, the USSR was abolished in December 1991 and the CIS was formed with Russia and the Ukraine arguing over the control of the former Soviet fleet. CIS orientation toward Southwest Asia is presently unclear and it needs to be seen if the CIS pursues former Soviet interests.

5. International concerns. Since the revolution in Iran, the political balance in Southwest Asia has been in a state of flux except for the position of Saudi Arabia. The war between Iran and Iraq, the Iraqi occupation of Kuwait, and events in Lebanon had added further destabilization in the region. US and multinational forces liberated Kuwait and forced Iraq into a peace settlement. However, Iraq appears to rearm their forces and Iran is obtaining arms from China. A bright outlook is that the former Soviet Navy left Aden in 1990. Furthermore, the former USSR have withdrawn their support for Syria and other countries in the region. Ethiopia fell to the rebels and former Soviet presence there has also become a non-entity. Former Soviet presence in this entire region has basically disappeared due to economic problems in the new CIS. Additionally, ongoing peace talks between Syria, Jordan, Lebanon, PLO and Israel may succeed in lasting peace. Sixty percent of the free world's oil supply is shipped through the Strait of Hormuz, and any threat to this flow could jeopardize world peace. The US cannot afford to ignore these facts. The relationship of the US to the area will continue to be influenced by Southwest Asian countries concern for independence and the concern for possible Iranian, Iraqi or outside intervention into Southwest Asia that would be counter to vital US national interests.

Lesson 1

Practice Exercise

Instructions

The following items will test your understanding of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, review that part of the lesson which contains the portion involved.

1. In which country are the An Nafud and Rub al Khali sand areas located?
 - ☐ A. Iraq.
 - ☐ B. Iran.
 - ☐ C. Saudi Arabia.
 - ☐ D. Jordan.
2. Where is the major chokepoint at which shipping from the Persian Gulf can be blocked at any time?
 - ☐ A. Strait of Tiran.
 - ☐ B. Strait of Mandeb.
 - ☐ C. Suez canal.
 - ☐ D. Strait of Hormuz.
3. Which language is spoken in Iran?
 - ☐ A. Semitic.
 - ☐ B. Farsi.
 - ☐ C. Arabic.
 - ☐ D. Yiddish.
4. Which side were the Turks on during World War I?
 - ☐ A. Central Powers.
 - ☐ B. Allied Powers.
 - ☐ C. Neutral.
 - ☐ D. Iran.

5. Which body of water separates Iran from Arabia?

- A. Arabian Sea.
 - B. Mediterranean Sea.
 - C. Persian Gulf.
 - D. Red Sea.
-

LESSON 2

SOUTHWEST ASIA - MILITARY CAPABILITIES, HISTORY, WEATHER, TERRAIN, AND LINES OF COMMUNICATION DATA

Critical Task: None

OVERVIEW

LESSON DESCRIPTION:

In this lesson you will learn to identify military capabilities and become familiar with the history, weather, terrain, and lines of communication (LOCs) of Bahrain, Israel, Jordan, Lebanon, Oman, Qatar, Syria, United Arab Emirates (UAE), and Yemen.

TERMINAL LEARNING OBJECTIVE:

- TASK:** Identify military capabilities and become familiar with the history, weather, terrain, and LOC of the above mentioned countries.
- CONDITION:** Given access to extracts from DA Pam 550-24, DA Pam 550-25, DA Pam 550-34, DA Pam 550-47, DA Pam 550-183, DA Pam 550-185, [FM 34-72](#) (Coordinating Draft), [FM 90-3](#), [FM 90-6](#), and IISS The Military Balance 1990-1991.
- STANDARD:** Identification of military capabilities and familiarization with history, weather, terrain, and LOCs of the above mentioned countries will be in accordance with DA Pam 550-24, DA Pam 550-25, DA Pam 550-34, DA Pam 550-47, DA Pam 550-183, DA Pam 550-185, and [FM 34-72](#) (Coordinating Draft), [FM 90-3](#), [FM 90-6](#), and IISS The Military Balance 1990-1991.
- REFERENCES** : The material contained in this lesson was derived from the following publications:

CIA, The World Factbook,
1997
DA Pam 550-24.
DA Pam 550-25.
DA Pam 550-34.
DA Pam 550-47.
DA Pam 550-183.

DA Pam 550-185.
[FM 34-72](#) (Coordinating
Draft).
[FM 90-3](#).
[FM 90-6](#).
IISS The Military Balance
1990-1991.

NOTE: Similar information is contained in Subcourse [IS3008](#), pertaining to Iran, Iraq, Kuwait, and Saudi Arabia. Military equipment of the above listed countries is presently contained in Subcourse [IS3008](#).

INTRODUCTION

Operation DESERT STORM has ended, however, as intelligence professionals, we must retain a strong interest and understanding in the military capabilities of Southwest Asian countries. Furthermore, it will be to our benefit by becoming familiar with the history, weather, terrain, and LOCs of Bahrain, Israel, Jordan, Lebanon, Oman, Qatar, Syria, UAE, and Yemen.

PART A: BAHRAIN

1. General Information. Bahrain (buh RAIN) is an independent Arab monarchy on a group of islands in the Persian Gulf. It consists of the main island of Bahrain, and 32 other islands including the nearby islands of Al Muharraq, Sitrah, and Umm al-Nassan. [Figure 2-2](#) is a country outline of Bahrain.

2. Statistical Data.

Name:	State of Bahrain
Capital:	Manama
Population:	603,318 (July 97)
Area:	676 square-kilometers (km ²) plus a group of 32 smaller islands
Ethnic divisions:	63% Bahraini, 13% Asian, 8% Iranian, 10% other Arabs, and 6% others
Language:	Arabic, English widely spoken, Farsi, and Urdu
Literacy rate:	85.2%
Religion:	Muslim (75% Shiite and 25% Sunni)
Gross national product (GNP):	\$4 billion
Per Capita income:	\$6,300
Unit of currency:	Bahraini dinar (BD)
Exchange rate:	\$1 = .376 BD
Time zone:	Three hours ahead of Universal Time Coordinated (UTC); eight hours ahead of US Eastern Standard Time; time zone CHARLIE
Defense forces:	Army, Air Force, Navy, and paramilitary
Flag (Figure 2-1):	

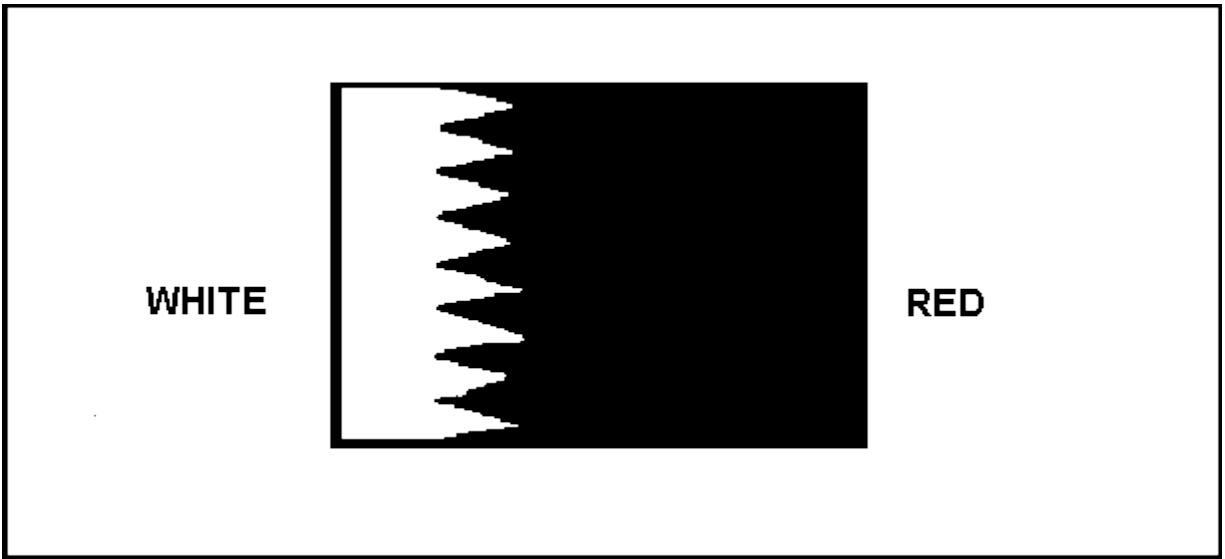


Figure 2-1. Flag of Bahrain.

Boundary representation is not necessarily authoritative.

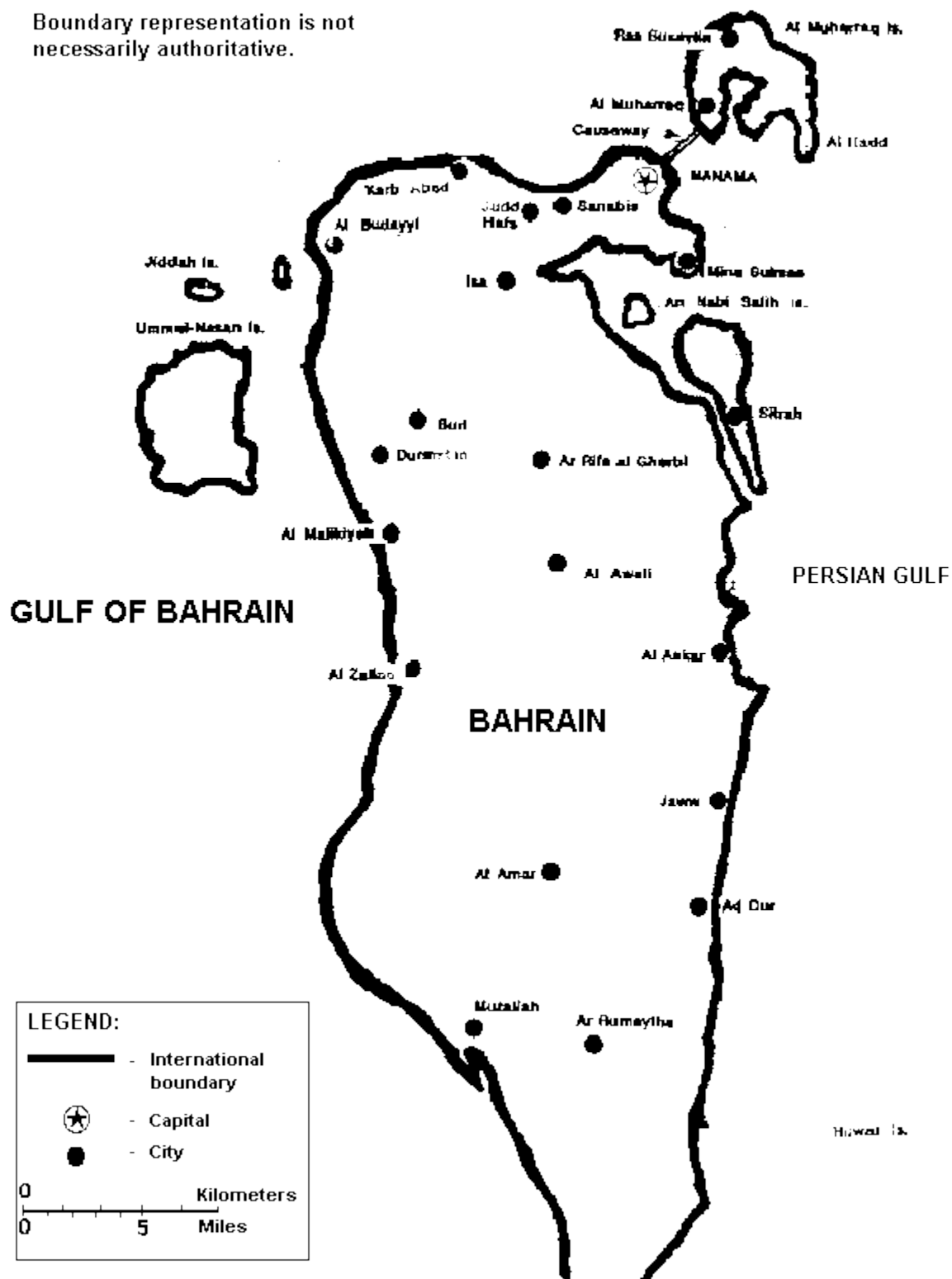


Figure 2-2. Bahrain.

3. History.

a. Historical background.

(1) Archeological evidence indicates that around 2600 B.C. Bahrain was part of the civilization of Dilmun which dominated the Persian Gulf from 4000 to 2000 B.C. Beyond that, little history about Bahrain is recorded until the 19th century when the British became involved with Persian Gulf trading activities.

(2) At the beginning of the 19th century, Bahrain, along with other Persian Gulf States, was actively engaged in piracy. During this time British involvement in the area increased in a concentrated effort to subdue piracy of its trading ships. In 1820, Bahrain signed a General Treaty of Peace with the British, agreeing not to engage in piracy. Friendly Bahraini-British relations then developed and continued through the 1800s and into the early 20th century. Acting for the Bahrainis, the British signed an agreement with the Ottomans in 1913, assuring that Bahrain would not be colonized by the British. A 1916 British agreement with the king of Saudi Arabia stipulated that Saudi Arabia would not attempt to take over Bahrain. These actions provided for some measure of stability in Bahrain.

(3) In 1968, Great Britain announced its decision to remove its forces from the Persian Gulf. Learning of the British intention, Bahrain joined eight other states (Qatar and the seven Trucial States) in an effort to form a union of Arab emirates. By 1971, the sheikdoms still had not agreed on terms of a union. Due to this, Bahrain decided to seek independence as a separate entity and became fully independent on 15 August 1971.

b. Recent history.

(1) Bahrain gained independence in 1971, and has maintained a remarkably stable monarchy. Since 1869, the ruling family, the Al-Khalifas, has dominated the government and society with the exception of one brief interruption. The political stability and relative economic prosperity of Bahrain can also be credited to the sheiks from the Al-Khalifa family. Bahrain is considered a moderate Arab state even though it opposed the Camp David agreement between Egypt, Israel, and the US, and the resulting Egyptain-Israeli treaty signed in March 1979.

(2) In 1970, Iranian Shiites sought to extend their revolutionary ideas among the Bahraini Shiites in an attempt to overthrow the Sunni ruling family. This attempt at domestic unrest and political opposition was not accepted by the mainstream of Bahraini Shiites. Religious tensions again increased to a minor degree with the Soviet invasion of Afghanistan and the outbreak of the Iraq-Iran war. Despite this, Bahrain has largely been unaffected by instabilities in the area.

(3) Bahrain has cooperated with multi-national forces during Operation DESERT STORM by allowing them access to its military facilities.

4. Weather.

a. Climate.

(1) Although the climate of Bahrain is relatively pleasant from October to April, it is characterized by intense heat and humidity during the summer months ([Table 1](#)). Daily temperatures are fairly uniform throughout the islands. The humidity is oppressive, 70 to 80% and tends to cover everything with a heavy dampness. A dry southwest wind, identified as the "qaws," periodically blows sand clouds across the barren end of the island of Bahrain toward Manama. A cool northerly wind, the "barra," comes in May and June.

Table 1. Annual temperatures (°Centigrade [C]).

<u>REGION</u>	<u>WINTER</u>	<u>SUMMER</u>	<u>EXTREMES</u>
	MIN MAX	MIN MAX	MIN MAX
Bahrain (all islands)	11° 24°	26° 41°	3° 47°

(2) The average annual rainfall is less than 10 centimeters (cm); no year-round rivers or streams exist. Rain tends to fall in brief torrential bursts during the summer months, flooding the normally dry shallow wadis and making secondary dirt roads impassable. Little of this water is caught for irrigation or drinking.

b. Light tables. Light tables reflect the average times, by month, for sunrise and sunset. At the times shown in [Table 2](#), general outlines of the horizon may be visible but ordinarily cannot be distinguished.

Table 2. Light table.

<u>MANAMA, BAHRAIN</u>											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>SUNRISE</u>											
0625	0622	0602	0529	0500	0445	0449	0503	0517	0530	0546	0608
<u>SUNSET</u>											
1657	1720	1739	1754	1809	1825	1834	1825	1758	1725	1656	1645

5. Terrain. Bahrain occupies an archipelago of 33 islands and has a land area of about 676 km². The main island accounts for 85% of the total land area; it lies at the entrance of the Gulf of Bahrain

between the coast of Saudi Arabia and the Qatar Peninsula. For centuries, this location has given the island group regional importance as a trade and transportation center. Only Bahrain, Al Muharraq, Sitrah, and Umm al-Nasan are of significant size; the remaining islands are little more than exposed rocks and sand bars. Bahrain Island, from which the archipelago takes its name, is about 48 kilometers (km) long and about 16 km wide at its broadest point; it is shaped somewhat like a sea horse. Bahrain lies 24 km from the Saudi Arabian coastline. The Huwar Islands off the west coast of Qatar also belong to Bahrain.

a. Terrain features.

(1) Most of the main island is desert with low outcroppings of limestone forming rolling hills, stubby cliffs, and shallow ravines ([Figure 2-3](#)). Inland of the partly cultivated western coast, the land rises 50 meters (m) to a light-colored plateau cut by wadis. Approximately in the middle of this plateau, a steep-sided hill, Jabal Duk-han, rises 137 m and is the highest point on the island. The limestone rock of the plateau is partially covered by sand, but much of it is strewn with gravel. While the southern portion of the island contains mainly sand, salt flats, and marshes, limited areas in the north can sustain agriculture. Bahrain has a number of fresh water springs and artesian wells that are mainly concentrated along the northern coast.

(2) The island of Al Muharraq is linked with the capital city of Manama by a 2.5 km causeway. The island is 5 km wide with a low, flat, sandy surface covered with date plantations and cultivated tracts. The island of Sitrah is linked to Bahrain by a bridge spanning a shallow channel. North of Sitrah is An Nabi Salih, where fresh water springs irrigate numerous date groves. Northwest of Bahrain is the small rocky island of Jiddah which serves as a prison settlement. South of Jiddah is the larger island of Umm al-Nasan, the personal property and private game preserve of the ruler. About 20 km southeast of the island of Bahrain and close to the coast of Qatar are the Buwar Islands, the objects of a territorial dispute between Bahrain and Qatar pertaining to off-shore oil exploration rights. See [Table 3](#) for trafficability.

b. Urban areas. Over 70% of the population lives in the Manama-Al Muharraq metropolitan area. The rapid growth of the two major urban areas, Manama and Al Muharraq, has caused difficulty for municipal services to meet the needs of the people.

c. Coasts and beaches. Bahrain Island has a coastline of 161 km. There is a maze of reefs and shoals around the Bahrain Archipelago, some of which are exposed at low tide. The largest and most dangerous of these reefs are the Fasht al-Bibal, east-southeast of Al Muharraq, and Fasht al-Jarim, north of Bahrain. Small islands around Al Muharraq and Sitrah all lie on reefs. Bahrain claims 3 nautical miles (nm) as the limits of its territorial waters. See [Table 4](#) for coast and beach access.

Boundary representation is
not necessarily authoritative.

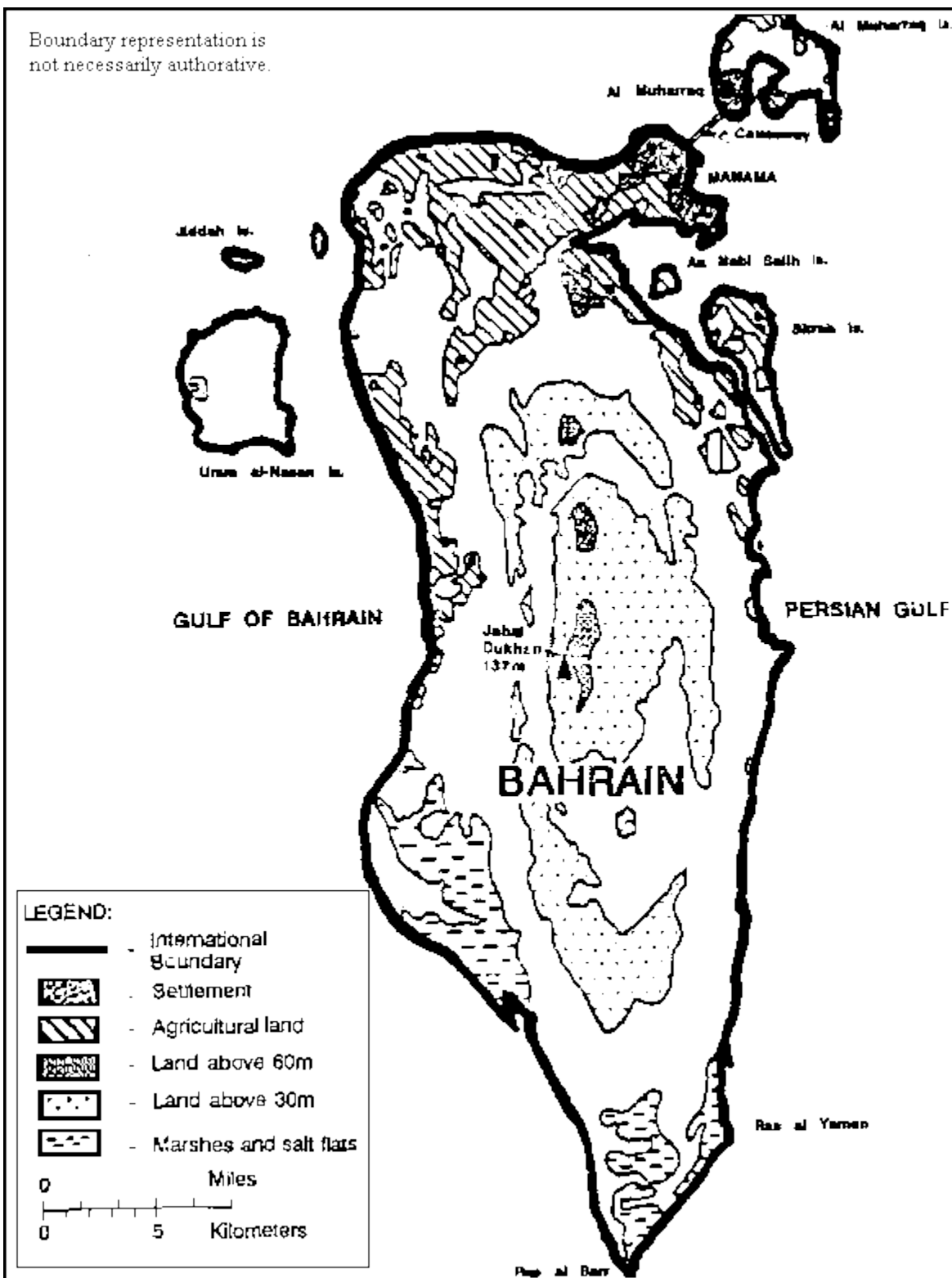


Figure 2-3. Terrain features of Bahrain.

Table 3. Trafficability.

<u>REGION</u>	<u>TRACKED VEHICLES</u>	<u>WHEELED VEHICLES</u>
Bahrain, Al Muharraq, and Sitrah Islands	Unlimited mobility except in areas of cliffs and escarpments which can be bypassed on the existing road system. Movement between islands on existing bridges and causeways.	Unlimited mobility, both road and cross-country, except where local surface conditions or cultivated areas may need to be bypassed.
Other Islands	Movement between islands only by shallow-draft boats, fully amphibious tracked vehicles, or rotary-wing aircraft. Movement of islands unrestricted.	Same as for Tracked Vehicles.

Table 4. Coast and beach access.

<u>AREA</u>	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
Entire Archipelago	Shallow beaches with gradually rising ground and almost unlimited access to the interior.	Extensive shoals and reefs restrict access of deep-draft craft, except in existing harbor areas.

6. Lines of communication (LOCs).

- a. Roads. The three main islands are well served by a system of paved roads that link all the major towns and villages. The road network consists of 2,740 km of paved roads and 581km of undetermined amount of unimproved roads ([Table 5](#) and [Figure 2-4](#)).
- b. Railroads. Bahrain has no railroad system.
- c. Ports.
 - (1) There is only one major Bahraini port located at Mina Sulman, Manama. The Arab Shipbuilding and Repair Yards' (ASRY) dry dock offshore facility is located south of Al Muharraq Island (as depicted in [Figure 2-4](#)).

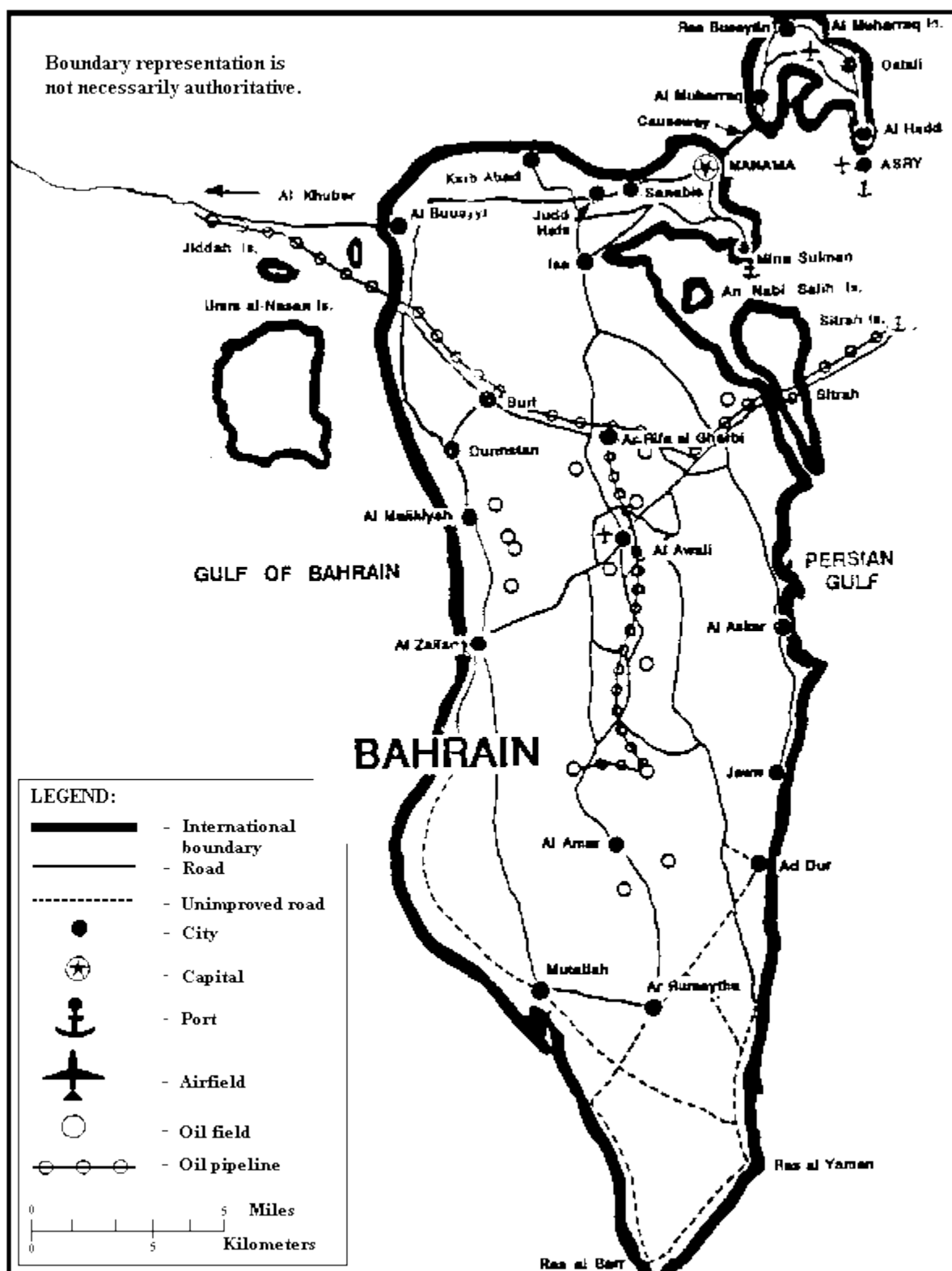


Figure 2-4. Roads and pipelines of Bahrain.

Table 5. Roadways.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Manama-Al Muharraq	4 km	Four-lane, 2.5 km causeway links the two cities
Manama-Sitrah	22 km	Bridge links Sitrah with the main island of Bahrain
Manama-Al Budayyi	15 km	None
Manama-Isa-Al Awali	20 km	None
Al Budayyi-Al Khubar, Saudi Arabia	26 km	24 km causeway linking Bahrain and Saudi Arabia
Al Awali-Az Zallaq	8 km	None
Al Awali-Ar RumaythaRas al Yaman	33 km	None

(2) Mina Sulman, located 9 km from the Bahrain International Airport, is a deep water harbor with accommodations that include 16 berths, a small craft quay, mobile cranes, and container facilities. Full provisioning is available. Further development is planned for the harbor.

(3) The Sitrah Island oil-loading terminal with six main oil berths is about 4.8 km from Sitrah Island at the end of the Sitrah Pipeline. Fresh water and all types of fuel are available. The Bahrain International Airport is 20 km away.

d. Air transportation. The air transportation network is identified in [Table 6](#). Bahrain is joint owner of Gulf Air and Gulf Helicopters along with Qatar, UAE, and Oman. Gulf Air flies to the major Persian Gulf cities and also handles other international flights. Bahrain's airfields are identified in [Table 7](#).

e. Water transportation. There are no inland waterways on any of the islands of the Bahrain Archipelago.

f. Pipelines. The Bahrain Pipeline network is depicted in [Figure 2-4](#).

Table 6. Air transportation network.

<u>AIRFIELDS</u>	<u>3 (2 USABLE)</u>
Runway Type	
Permanent surface	2
Unpaved field unusable	1
Runway Length	
4,000 m	1
2,325 m	1

Table 7. Airfields.

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
Al Awali	Bahrain Oil Company field: 20 km SSW of Manama; one 2,325 m sand runway; sited on desert terrain; used by oil company aircraft.
Bahrain International	Major civil terminal on Al Muharraq Island; one 4,000 m asphalt runway; sited on a level coral island; major commercial facility; used by domestic and international.

7. Military capabilities.

a. Background. The Bahraini Armed Forces are limited to defensive action. It is believed that the majority of the armed forces are from tribes supportive of the ruling Al-Khalifa family. The nation's defense has rested on the assumption that if Bahrain were invaded, friendly nations would come to Bahrain's aid.

b. Command structure. The constitution designates the Emir as Supreme Commander of the defense force. The command runs from the Emir through the Minister of Defense, who is the Commander in Chief of the defense force. The latter is a member of the ruling Al-Khalifa family ([Figure 2-5](#)).

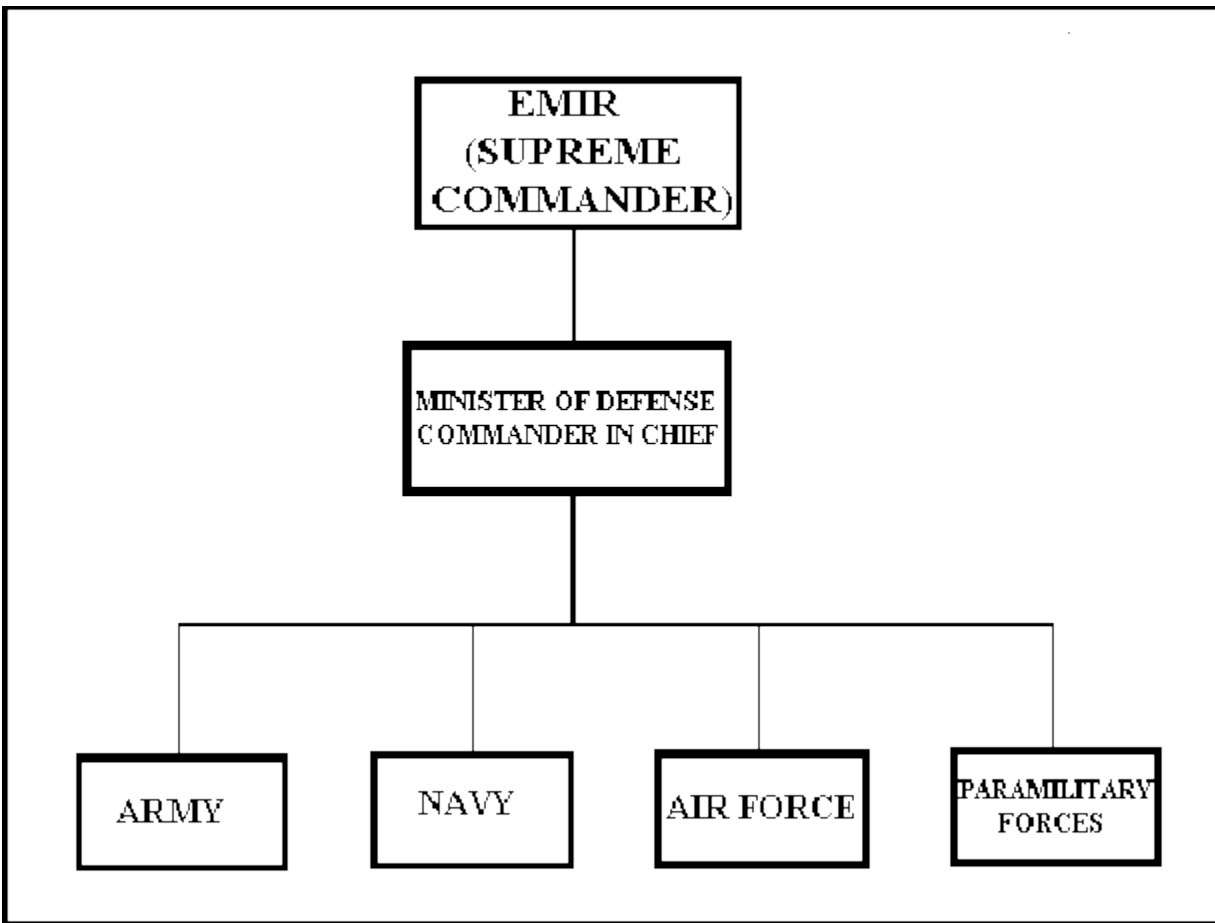


Figure 2-5. Bahraini Armed Forces command structure.

c. Armed Forces. The mission of the armed forces is to provide internal security for the country. The Bahraini Armed Forces consist of the Army, Air Force, Navy, and paramilitary forces. The total strength of the armed forces is 11,000 active duty personnel and 9,850 paramilitary personnel.

d. Army. The Army consists of approximately 5,000 personnel and is organized as shown in [Figure 2-6](#).

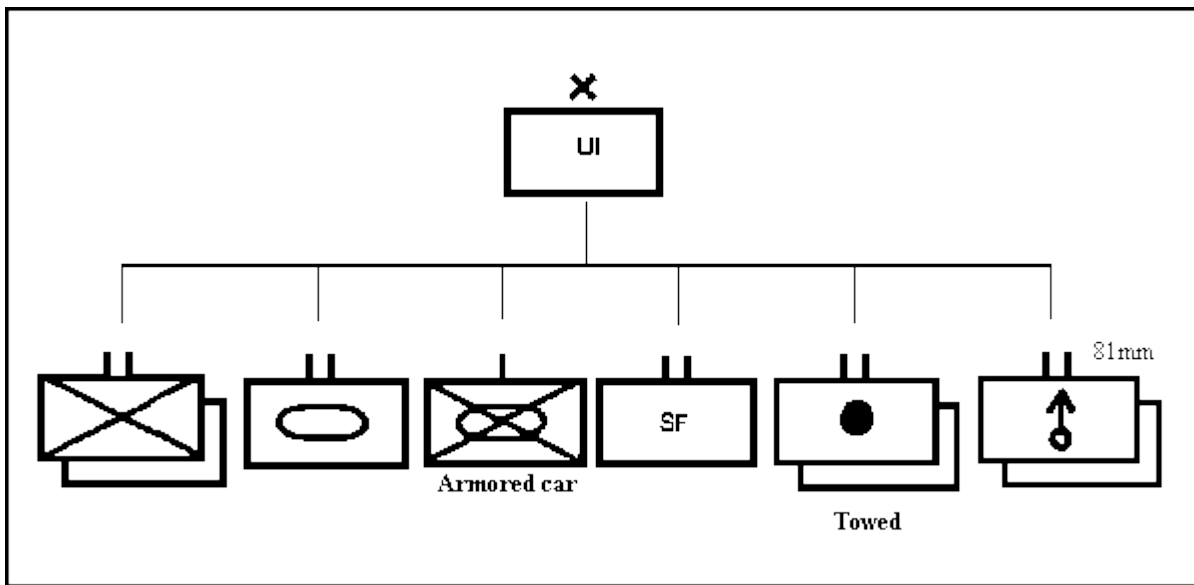


Figure 2-6. Bahraini Army organizations.

e. Air Force. The Air Force consists of approximately 1,500 personnel. The major air base is located on Al Muharraq Island ([Figure 2-4](#)). There are 2 x squadrons with fighter aircraft and 1 x helicopter squadron.

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f. Navy. The Navy consists of approximately 1,000 personnel. Ships include 2 each Lürssen patrol boats, corvettes, and landing craft/hover craft. The major base is Jufair (Manama).

g. Paramilitary forces. These forces consist of approximately 2,000 police personnel and 250 Coast Guard personnel.

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PART B: ISRAEL

1. General information. Israel is a small republic on the eastern shore of the Mediterranean Sea. Israel was founded in 1948 as a homeland for Jews. The land presently covers approximately 27,814 km² including the occupied and annexed lands gained through conflicts with Arab nations. Tel Aviv, the largest city, is the internationally recognized capital; however, the Israelis have declared Jerusalem as the capital. [Figure 2-8](#) is a country outline of Israel.

2. Statistical Data.

Name:	Israel
Capital:	Jerusalem
Population:	5,534,672 (July 1997)
Area:	27,814 km ²

Ethnic divisions:	82% Jewish, 18% non-Jewish (mostly Arab)
Language:	Hebrew (official), Arabic (used officially for Arab minority), English (most commonly used foreign language)
Literacy rate:	95% total population
Religion:	85% Judaism, 11% Islam, 4% Christian and other
GNP:	\$39 billion
Per capita income:	\$8,600
Unit of currency:	Shekel
Exchange rate:	\$1 = 3.28 Shekels
Time zone:	Two hours ahead of UTC, seven hours ahead of US Eastern Standard Time; time zone BRAVO
Defense forces:	Army, Air Force, Navy, and paramilitary
Flag (Figure 2-7):	

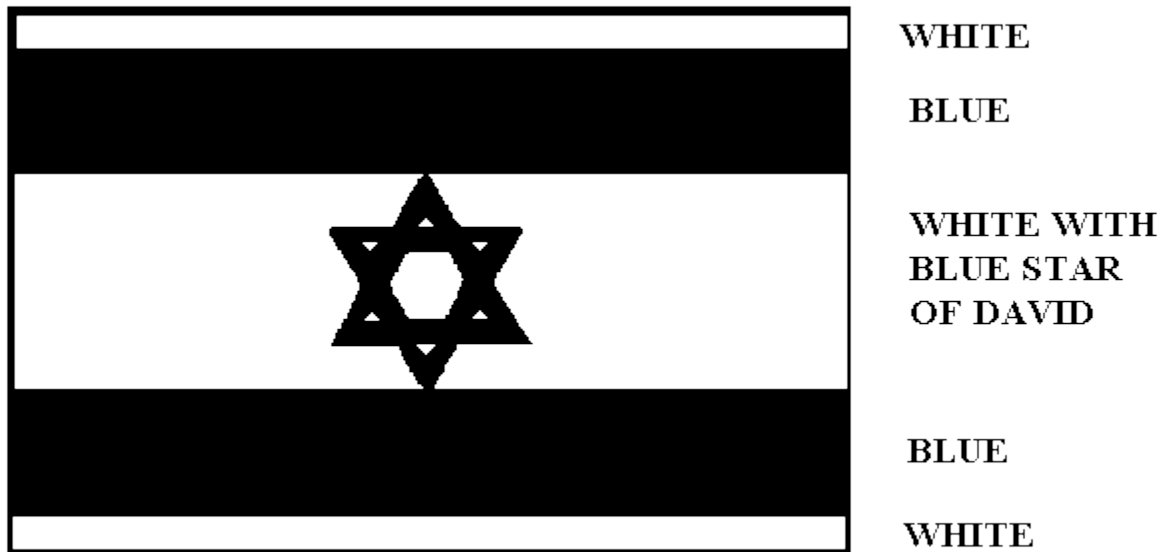


Figure 2-7. Flag of Israel.

3. History.

a. Historical background.

(1) The area which encompasses Palestine was once inhabited by the Habiru (Hebrew) tribes of seminomadic peoples. The Habiru were descendents of Abraham, who with his family had migrated from Mesopotamia to Canaan in the 15th or 16th century B.C. One of the largest and most powerful of the Habiru tribes was the tribe of Judah. The word Jew is derived from this tribal name.



Figure 2-8. Israel.

(2) In the 10th century B.C., the Hebrews conquered the entire general area which in turn formed the kingdoms of Israel and Judah. Centuries later Alexander the Great

bypassed Israel and allowed the Jews to retain local sovereignty as long as they recognized Greek overlordship.

(3) In 63 B.C. Roman armies captured Jerusalem, and the land became part of the Roman Province of Syria. Several minor rebellions took place and in 70 A.D. the Roman armies destroyed the Jewish temple in Jerusalem and drove out the Jews. This dispersal resulted in an exodus of Jews to many other parts of the world and reduced the number of Jews remaining in Palestine to an almost insignificant minority of some 2% of their former numbers. The Arab population increased, and with the introduction of Islam, Palestine became a predominantly Muslim area. Palestine was ruled in turn by the Roman Empire, the Islamic Empire, the Ottoman Empire, and eventually by Great Britain as a result of the breakup of the Ottoman Empire after World War I.

(4) In 1915-16 Hussein-McMahon correspondence promised independence and creation of Arab states in return for Arab assistance against the Turks. In 1916 Sykes-Picot agreement was signed which stated the UK and France would divide the region after the war and all areas would become UK or French protectorates (colonies). In 1917, British Foreign Secretary Balfour wrote to Lord Rothschild, a leader of the British and international Zionist movement, committing the British Government to the "establishment in Palestine of a National Home for the Jewish People." The intent of the letter was to ensure the support of the Jews in Britain, the US, and postrevolutionary Russia for the duration of the war in Europe. At the same time, other commitments were made to the Arab leaders. These promises were almost in direct contradiction to the Zionist commitment. Jewish immigration to Palestine increased in the 1920s and 1930s. It became a flood as anti-Semitic pogroms in Germany increased in violence. By 1939, 30% of the population of Palestine was Jewish. After World War II further waves of Jewish immigrants came to Palestine. In May 1948, the leaders of the Palestine Jewish community proclaimed the establishment of the state of Israel. The territory of the state was that portion of Palestine designated as Jewish by UN resolution.

b. Recent history.

(1) On 15 May 1948, armies from neighboring Arab nations entered Palestine and attacked the newly formed Israeli defense forces. Under the auspices of the United Nations (UN), a truce was negotiated, and in 1949, four armistice agreements were reached. In the ensuing seven years, violence along the borders continued. The 1956 Suez War was caused when Egypt nationalized the canal and UK, France, and Israel invaded. In October 1956, Israel invaded the Gaza Strip and the Sinai Peninsula; in March 1957, Israel withdrew its forces and a U.N. Emergency Force (UNEF) was installed to prevent further hostilities. The US was responsible for terminating the war but Nasser of Egypt got the credit. Serious tension built up in 1967, and the UNEF was ordered to leave the area. Intensive fighting then broke out between Israel and the countries of Egypt, Jordan, and Syria. After six days Israel controlled the Sinai Peninsula, the Gaza Strip, the Golan sector of Syria, and the West Bank of the Jordan River, including the eastern sector of Jerusalem.

(2) A tense, six-year period of no war/no peace ended on 6 October 1973, when Egypt and Syria simultaneously attacked Israel. Egyptian and Syrian advances were initially significant. Israel, however, recovered on both fronts. When a cease-fire was negotiated, Israel had pushed Syria well beyond the 1967 cease-fire lines and had crossed the Suez Canal and occupied a salient position on the West Bank. In March 1979, the heads of state of Israel and Egypt signed a peace treaty officially ending the 1967 conflict and guaranteeing the rights of each other to peaceful coexistence. In April 1979, the first Israeli cargo ship passed through the previously closed Suez Canal.

(3) The history of Israel has been and continues to be a chronology of conflict with the Palestinians and the Arab nations in Southwest Asia. These have included: Arab/Palestinian terrorist attacks on the Israelis, Israeli retaliation and "preemptive" attacks on various Arab states, the killing of Israeli Olympic athletes in Munich, Israel's two incursions into Lebanon and the Palestinian camp massacre, and others. In the most recent Gulf War between multi-national forces and Iraq, the US persuaded Israel to stay out of the war, although Iraq targeted Israel with SCUD missiles several times causing some casualties and minor damage. Israel is the world's major beneficiary of US aid, receiving more than four billion dollars annually. The future appears to promise a settlement between Israel and the other Arab states.

4. Weather.

a. Climate. Israel has a Mediterranean climate characterized by long, hot, dry summers and short, cool, rainy winters. There are four geographical regions in Israel; the coastal plain, the central hills, the Rift Valley, and the Negev Desert. Basic climatic patterns are modified locally by altitude and latitude. Southward and at lower altitudes, the temperature increases and rainfall lessens; the reverse is true to the north and at higher altitudes ([Table 8](#) and [Figure 2-9](#)).

Table 8. Annual temperatures °C.

<u>REGION</u>	<u>WINTER</u>	<u>SUMMER</u>	<u>EXTREMES</u>
	MIN MAX	MIN MAX	MIN MAX
Coastal Plains	22° 30°	8° 15°	-1° 43°
Central Hills	10° 26°	4° 10°	-3° 43°
Rift Valley	24° 38°	8° 19°	-1° 48°
Negev Desert	19° 40°	6° 24°	-2° 50°

(1) In the coast plains temperatures are moderate year-round. About 70% of the average precipitation, which is 50 to 60 cm, occurs from November to February with very little in the summer. Although rainfall tends to be concentrated in violent storms, often causing disastrous floods and erosion, it can also be in the form of gentle showers. Nights are mostly clear in the summer; half of them are cloudy in winter.

(2) In the central hills precipitation is generally the same as that of the coastal plains except for the presence of snowfall in the higher elevations during January and February. Most nights are clear in the summer, more than half are cloudy in the winter.

(3) In the Rift Valley there is no precipitation in the summer, and the brief showers in the winter are heaviest in the north. Annual precipitation is approximately 30 cm. Nights are generally clear in summer; about one third are cloudy in winter.

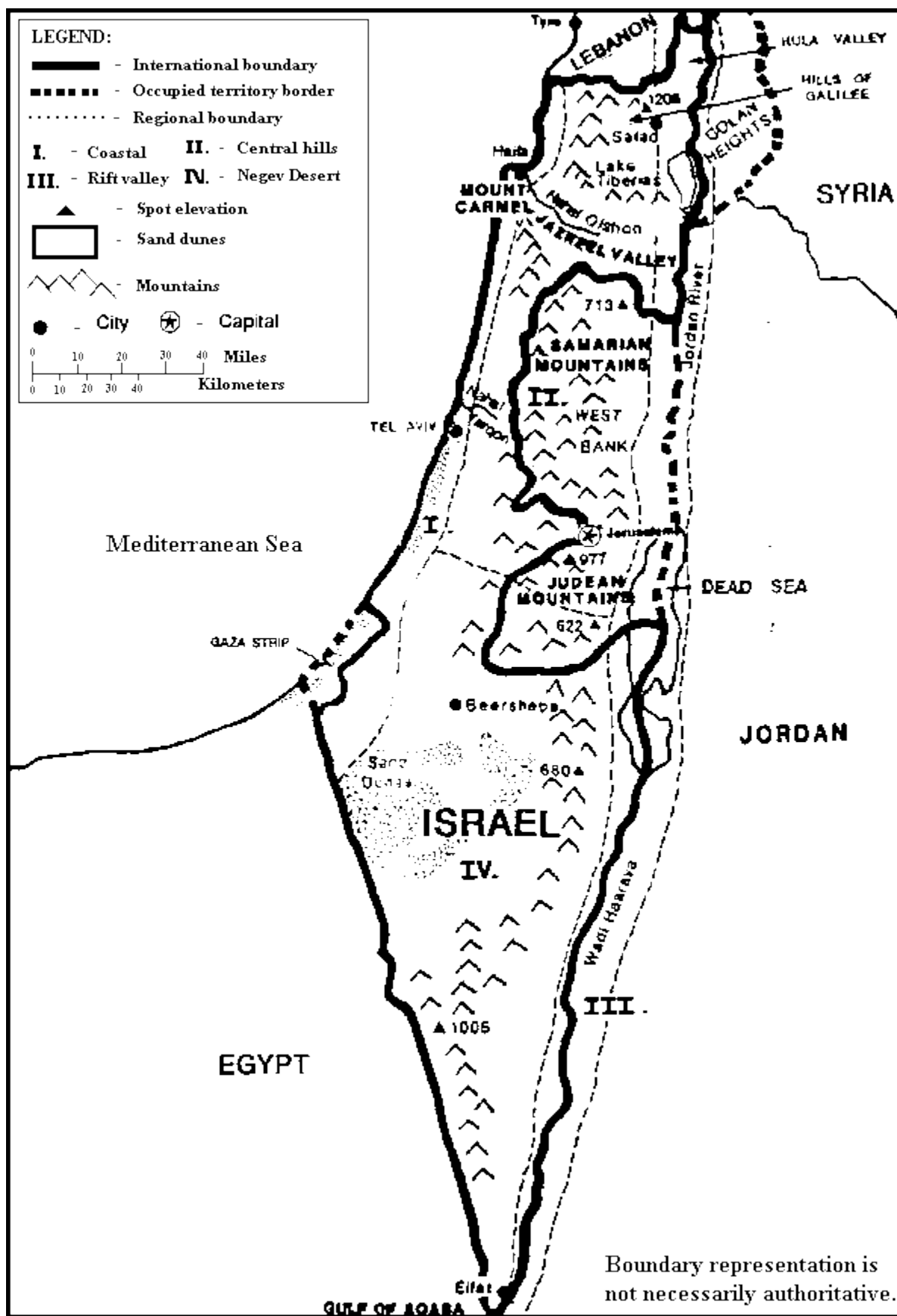


Figure 2-9. Terrain features and natural regions of Israel.

(4) The Negev Desert is hot and barren. Annual precipitation in this area varies from 20 cm in Beersheba to 3 cm in Eilat. Sandstorms, which are called "sharav" or "hamsteen," are quite common during spring and summer. These hot, parching winds blow from the inland desert and last only about two to three days at a time.

b. Light table. Light tables reflect the average times, by month, for sunrise and sunset. At the times shown in [Table 9](#), general outlines may be visible, but the horizon generally cannot be distinguished.

Table 9. Light table.

<u>LATITUDE OF CAIRO</u>												
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
<u>SUNRISE</u>												
0642	0635	0609	0530	0455	0435	0438	0456	0516	0535	0557	0624	
<u>SUNSET</u>												
1647	1715	1738	1800	1821	1842	1851	1838	1805	1726	1651	1634	

5. Terrain. Israel comprises 27,814 km² (about the size of New Jersey) on the eastern shore of the Mediterranean Sea at the meeting point of Asia Minor and Africa. Included in Figure 2-9 are the occupied territories of the West Bank, the Gaza Strip, and the Golan Heights. The country stretches 424 km north to south, while its width from east to west varies from 10 to 114 km. Israel is bordered to the west by the Mediterranean Sea, to the north by Lebanon, to the east by Syria and Jordan, and to the south by Egypt. Land utilization is as follows: 40% pasture and meadow; 29% unsurveyed (mostly desert); 20% cultivated; 4% forest; 4% desert, waste, or urban; and 3% inland water.

a. Terrain features. Israel's four distinct natural regions are the coastal plains, the central hills, the Rift Valley, and the Negev Desert ([Figure 2-9](#)).

(1) The coastal plains border the Mediterranean and stretch from the Lebanese border in the north to the Gaza Strip in the south, interrupted only by the Cape of Mount Carmel at Haifa. The plains gradually narrow from south to north; they are 40 km wide at Gaza and 5 km wide at the northern border. The plains are fertile, humid, densely populated,

and agriculturally active. They are traversed by several short streams and wadis, only two of which, the Nahal Yarqon and the Nahal Qishon, have permanent water flows. The streams and wadis of the coastal plains are essentially oriented east to west. Water is plentiful in the more densely populated areas and northward. In the southern portion of the region, water is available along the major trails.

(2) To the east of the coastal plains lies the central hills region. In the north the hills of Galilee represent a lower and gentler continuation of the Lebanon Mountains. To the south, in an area largely composed of the West Bank of the Jordan River, lie the Samarian and the Judean mountains. The hills region averages about 700 m in elevation and culminates at the 1,208 m Mount (Har) Meron, the highest point in the country, near Safad in the hills of Galilee. The hills are generally flat-topped with wadis, some with walls almost 200 m high, and oriented east to west. At several points the mountains are cut by valleys. The largest valley is the Jezreel, which stretches 48 km from Haifa southeast to the Jordan River Valley; the Jezreel Valley is 19 km across at the widest point. The western slopes of the central hills region are characterized by a deep dissection; the eastern slopes resemble an escarpment. Vegetation is mostly sparse grass or shrub with some forest land on the less accessible slopes. The area is moderately populated. Water is available in streams, springs, and wells which are numerous throughout northern Israel. Southward, pools form after winter rains, creating many springs and filling wells and cisterns.

(3) East of the central hills region lies the Rift Valley. From the Hula Valley in the north of this region, the Jordan flows into Lake Tiberias (also known as the Sea of Galilee and as Lake Kinneret) and continues southward into the Dead Sea. Lake Tiberias, which is slightly saline, is 165 km² in area and lies 210 m below sea level. The Dead Sea, which is highly saline and 1,020 km² in area, lies 394 m below sea level--the lowest point in the world. Between the Dead Sea and the Gulf of Aqaba lies Wadi Haarava (also referred to as Wadi al Arabah). The Rift Valley has an extremely flat to gentle rolling floor flanked by hills and mountains which rise in some places as steep cliffs. Perennial streams flow mostly from the east, and streams and water decrease as they move southward. Heavy vegetation is prevalent along the stream banks. Water is available in lakes, marshes, and along the Dead Sea. South of the Dead Sea during the winter months, water can be found in springs, cisterns, and in shallow holes dug in the wadis. The area is densely populated in the north.

(4) The Negev Desert comprises over 60% of Israel's total area. The Negev Desert forms a triangle with the base of the desert in the north on the outskirts of Judea and its apex at the southern tip of the country. The Negev is comprised of lowlands on the west, hills in the central portion, and Wadi Haarava on the eastern border. The Negev Desert region is mostly an arid wasteland of high sand dunes and ridges with an occasional oasis. Water is available from wells, cisterns, and springs which may be 24 to 32 km apart along major trails. An evaluation of trafficability in Israel is at [Table 10](#).

b. Urban areas. About 30% of the population is concentrated in Israel's three largest cities-- Jerusalem, Tel Aviv, and Haifa. Between Tel Aviv, and Haifa countless small communities give the appearance of a large urban area and are interspersed with farms and sand dunes. [Table 11](#) describes the major urban areas.

Table 10. Trafficability.

<u>REGION</u>	<u>TRACKED VEHICLES</u>	<u>WHEELED VEHICLES</u>	<u>REMARKS</u>
Coastal Plains	Generally good. Alternating builtup areas and cultivated areas provide concealment but restrict fields of fire and shorten probable engagement ranges.	Good road system provides high speed access for movement.	
Central Hills and Mountains	Fair mobility and maneuverability. Hill masses overlook roads; orchards and groves restrict movement but provide masking.	Road system fair; dominant terrain must be controlled.	Movement through Rift Valley only through passes and cuts in escarpment on west.
Rift Valley	Good north-south movement; east-west movement limited by bordering hills and mountain passes. Entire valley is dominated by higher ground to the east and west.	The north-south river will require bridging except in central areas where road systems cross. Streams will hinder north-south movement, restricting most traffic to existing road system.	See FM 90-3 , Desert Operations.
Negev Desert	Excellent movement in western portion; the eastern portion is broken, sharply restricting movement to lower ground dominated by cliffs, flat-topped ridges, and escarpments.	Traffic will be limited to the existing road network.	

Table 11. Urban areas.

<u>CITY</u>	<u>REMARKS</u>
Jerusalem	415,000 population; Israeli designated capital; 730 m high amid the Judean hills amid the Judean hills; political center; holy city for the three great monotheistic religions; educational and cultural center; divided into three parts--the Old Walled City, West (Jewish), and East (Arab). Walled City is densely populated; trafficability along narrow streets is a problem.
Tel Aviv	329,500 population; internationally recognized capita; industrial and commercial center; laid out around several main arteries running north-south; bounded to the north by the Nahal Yarqon (Yarqon River); built on sand dunes.

c. Coasts and beaches. Israel has 273 km of coastline. It claims 6 nm as the limits of its territorial waters. Coast and beach access to Israel is evaluated in [Table 12](#).

Table 12. Coast and beach access.

<u>AREA</u>	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
North and Central Coast	Beaches generally good for conducting amphibious operations. Coastal plains provide room for deployment after landing	Northern beaches are dominated by hills in the Haifa area. Beaches between Haifa and Acre provide access to the Jazreel and upper Jordan Valleys. The central beaches give immediate access to key areas of the country.
Southern Coast and Gaza Strip	Beaches generally good for conducting amphibious operations. Extensive coastal plains provide room for deployment.	Movement from beaches give access to sparsely developed areas.

6. LOCs. The transportation system is well developed, partly because of defense needs. Also, due to alienation from most of the surrounding Arab states, Israel is almost totally dependent on maritime and air transportation means for the international exchange of goods.

a. Roads. The road network is Israel's chief means of transport within the country itself. [Table 13](#) depicts the road network and major routes. [Figure 2-10](#) locates the major routes.

Table 13. Roadways.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Tel Aviv-Jerusalem	63 km	4 lanes; 7% road grade from Latrun to Jerusalem.
Tel Aviv-Hadera-Haifa	95 km	4 lanes; transit time-- 1 1/4 hours
Tel Aviv-Ashdod-Beersheba	113 km	Transit time--2 hours
Hadera-Afula-Tiberias	80 km	None
Haifa-Tiberias	66 km	None
Haifa-Acre-Tyre (Lebanon)	68 km	4 lanes from Haifa to Acre
Acre-Safad	38 km	7% road grade
Tiberias-Marjiyun (Lebanon)	81 km	None
Beersheba-Eilat	243 km	Transit time--4 hours
Beersheba-Nitsana-Ismailia (Eqypt)	174 km	None
Tel Aviv-Gaza-Al Arish (Egypt)	152 km	None

Jerusalem-Nabulus-Amman
(Jordan)

105 km

None

Jerusalem-Allenby Bridge-
Amman (Jordan)

88 km

Except for Saturday, bridge is
open daily from 7 AM to 1 PM;
once across the bridge into
Jordan, personnel may not
recross into Israel.

Jerusalem-Jericho-Beit Shean

108 km

None

Jerusalem-Beersheba

121 km

7% road grade in the West
Bank area.

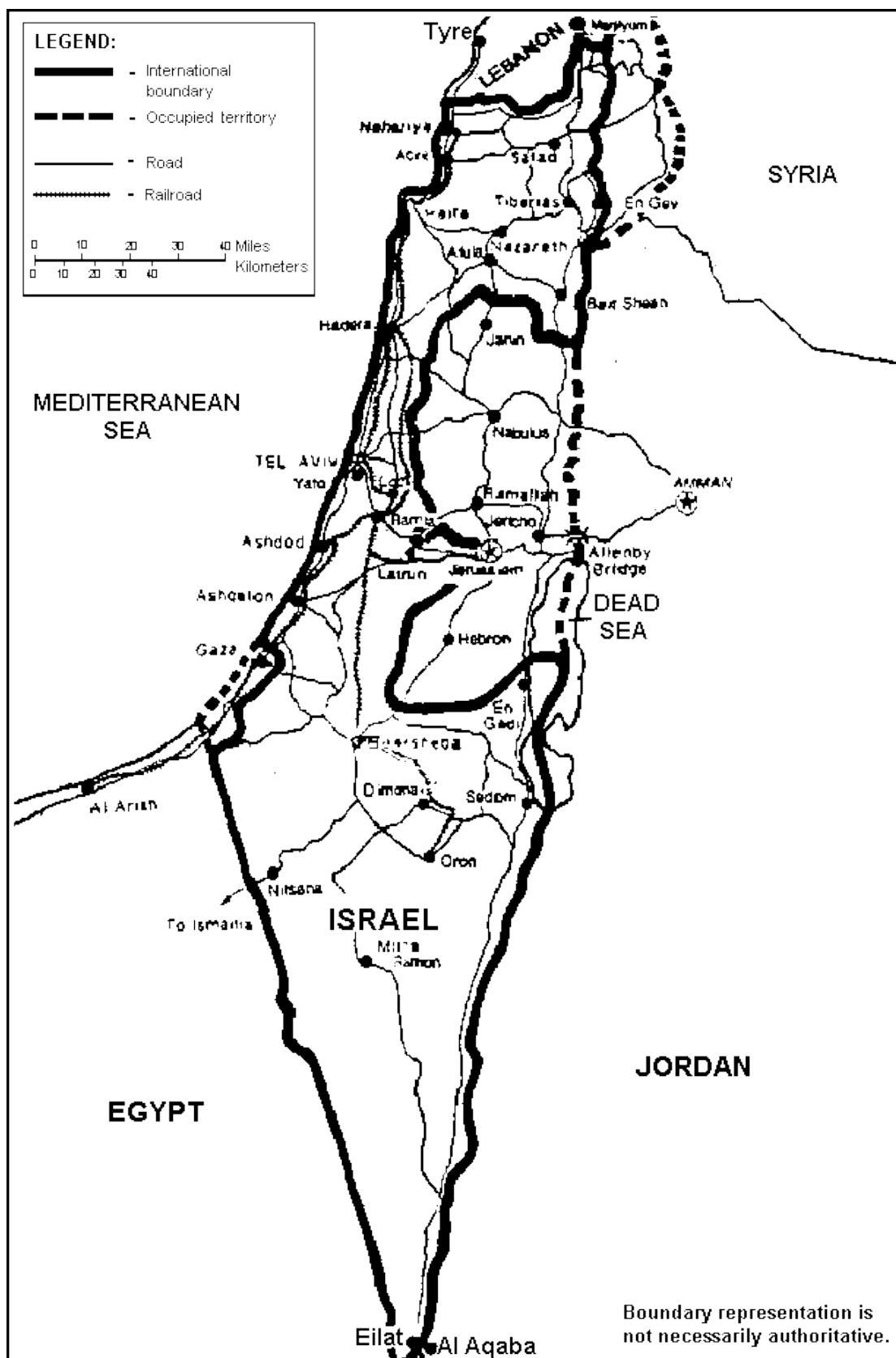


Figure 2-10. Roads and railroads of Israel.

b. Railroads. The railroad system links all of the major urban areas. [Figure 2-10](#) locates the major railway routes. [Tables 14](#) and [15](#) identify the railway network and main routes. A rail link from Oron to Eilat is planned, and a 60 km rapid transit line for the Tel Aviv metropolitan area is under study. At present, rail is the slowest method of travel within the country.

Table 14. Railroad network.

Rail Headquarters:	Israel State Railroad Central Station Haifa, Israel
Standard Gauge:	1.4 m
Track:	526 km
Motive Power:	55 diesel locomotives
Rolling Stock:	107 passenger coaches 2,200 freight cars

Table 15. Railway routes.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Tel Aviv-Haifa	100 km	None
Haifa-Nahariya	40 km	N of Nahariya the railroad is abandoned
Tel Aviv-Jerusalem	75 km	None
Tel Aviv-Beersheba-Oron	163 km	Spur line to the phosphate mine
Tel Aviv-Lod-Ashod	50 km	None
Tel Aviv-Lod-Al Arish (Egypt)	165 km	None
Lod-Haifa	110 km	None

c. Ports. All port facilities are under the direction of the Israel Ports Authority that develops, builds, administers, and operates the ports. The main ports are Haifa, a natural harbor which handles 60% of all Israeli cargo, Ashdod, and Eilat. In addition, Israel has five minor ports and an oil terminal. Table 16 lists three major ports and their capabilities and Ashkelon as an oil terminal. Two shipping companies, El-Tam Limited and ZIM Israel Navigation Company Limited, operate an international cargo services network. [Figure 2-11](#) identifies three major, five minor port locations and one oil terminal.

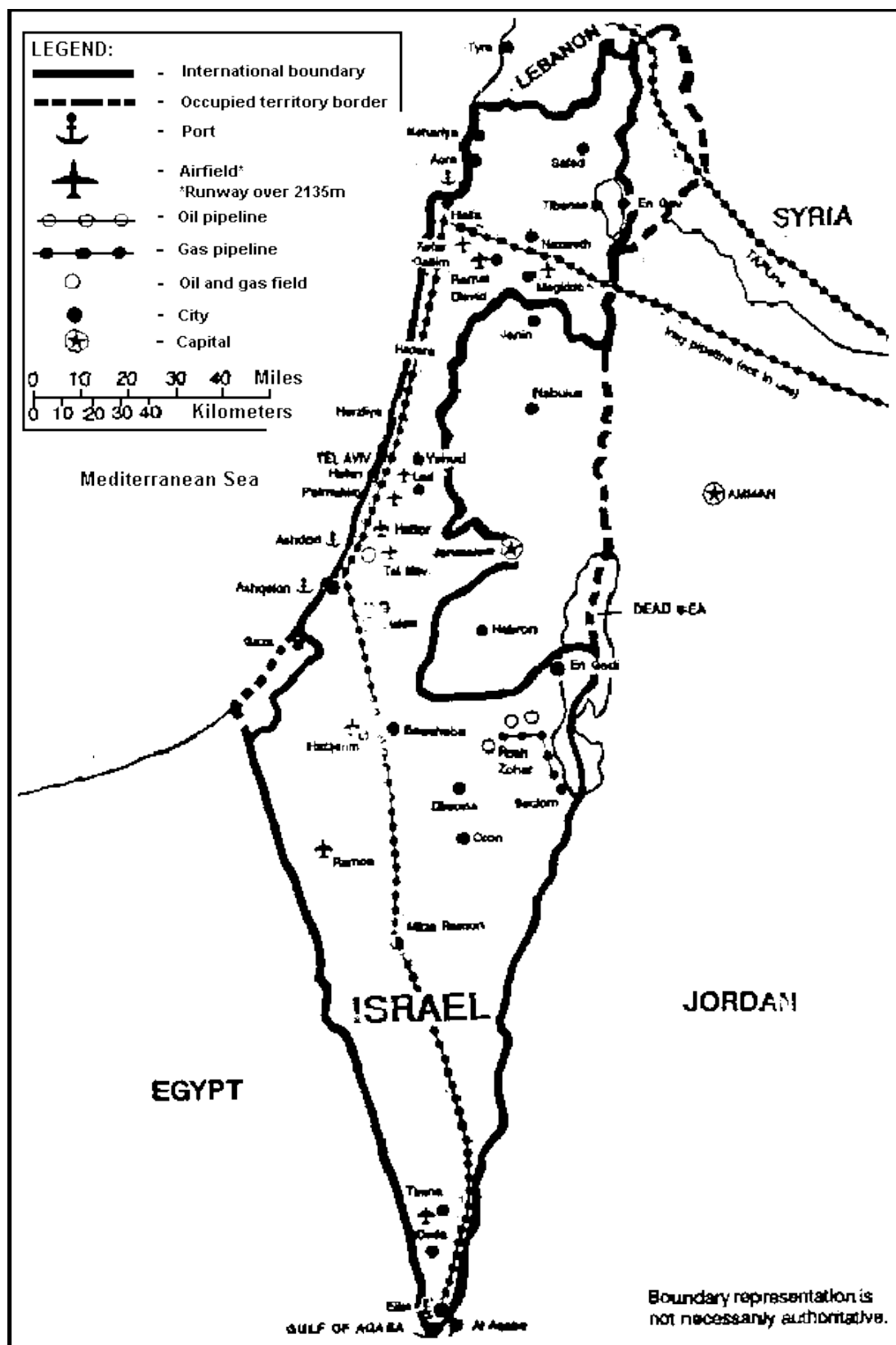


Figure 2-11. Ports, airfields, and pipelines of Israel.

Table 16. Ports.

<u>PORTS</u>	<u>TYPE AND CAPABILITIES</u>
Haifa	Major port; natural deep-water harbor; oil and cargo berths; roll-on/roll-off; hazardous cargo handling capability; full provisioning*.
Ashdod	Major port; finger pier system; roll-on/roll-off; minor ship repairs; full provisioning.
Eilat	Major commercial (cargo and oil terminal) port and major naval base; three berths; roll-on/roll-off; full provisioning; road system linked.
Ashqelon	Oil terminal.
*Includes fuel, fresh water, and food.	

d. Air transportation. Israel's main international airport is the David Ben Gurion International Airport at Lod near Tel Aviv. There are also numerous domestic airfields. [Figure 2-11](#) locates the Israeli airfields. [Tables 17](#) and [18](#) identify the air network and key airfields. Israel operates its own international airlines, El Al Israel Airlines Limited, headquartered at the Ben Gurion Airport. Arkia Israeli Airlines operates a domestic and charter airline. There are two other charter airlines, Maof and Sun Dor. CAL, a private cargo air transport service to Europe, was formed in 1976.

Table 17. Air transportation network.

AIRFIELDS	63 (52 USABLE)
Runway Type	
Permanent surface	24
Unpaved fields and usable airstrips	28
Unusable airstrips	11

Runway Length*

2,400-3,660 m	5	
1,200-2,439 m		10
Under 1,200 m		37

* Runway lengths are for paved and unpaved usable airfields only.

Table 18. Airfields.*

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
Ben Gurion	Civil/military field; 17 km SE from Tel Aviv in Lod; one 3,350 m, one 3,040 m, and one 1,770 m asphalt runway; used by domestic, commercial, and military aircraft, as well as international passenger and cargo traffic; Israeli Aircraft Industries manufacturing complex on airfield.
Hatzerim	Military facility; 10 km W of Beersheba; two 2,400 m and one 1,900 m asphalt runways; sited on a coastal plain; used as major operational base; no further unclassified information available.
Hatzor	Military facility; 28 km S of Tel Aviv; two 2,450 m and two 2,400 m asphalt runways; sited on a coastal plain; used as major operational base; no further unclassified information available.
Kefar Gallim Highway Strip	Military facility; 5 km S of Haifa; one asphalt runway; used for jet training, gliders, and glider club.
Ovda	Military facility; 38 km N of Eilat; one 3,000 m and one 2,600 m asphalt runways; sited on a flat elevated wadi; used by Israeli Air Force; Kfir C-2, Mirage 5, C-130, C-47, and F-16 aircraft possibly deployed on field; major military airfield

with two fighter squadrons and air defense unit; used as civil aviation terminal; also known as Biquat Uvda.

Palmahim	Military facility; 10 km SW of Tel Aviv on Mediterranean coast; also known as Base 30; no further unclassified information available.
Ramat David	Military facility; 10 km SW of Tel Aviv on Mediterranean coast; also known as Base 30; no further unclassified information available.
Ramon	Military facility; 55 km SSW of Beersheba; one 3,050 m and one 2,700 m asphalt/concrete runway; sited in a desert area; used as a major military airfield with two fighter squadrons and a helicopter squadron.
Tel Nov	Military facility; 32 km S of Tel Aviv; two 2,400 m and one 515 m asphalt runways; third 2,400 m runway under construction; maintenance facility for F-16, F-15, F-4, A-4, Kfir, and rotary wing aircraft; no further unclassified information available.

*Runway lengths 2,135 m or longer.

e. Water transportation. Little information is available on the trafficability of the Dead Sea. Lake Tiberias is serviced by the Kinneret Sailing Company, which operates a ferry service between Tiberias and En Gev. The Jordan River is not navigable.

f. Pipelines. The pipeline system in Israel totals 1,087 km ([Table 19](#)). A natural gas pipeline carries methane from fields near the Dead Sea (Rosh Zohar) to refineries on its shores, then to towns in the Negev and to the Ovon phosphate plant. Major pipelines are shown in [Figure 2-11](#).

Table 19. Pipelines.

<u>TYPES</u>	<u>LENGTH</u>
Crude oil	708 km
Refined products	290 km

Natural gas	89 km
<u>MAJOR PIPELINES</u>	<u>DESCRIPTION</u>
Eilat-Ashqelon	Crude oil; 264 km; 105 cm in diameter pipe; handles 20 million tons annually; potential 60 million tons; branch lines lead to Ashdod and Haifa refineries and to consumption centers.
TAPLine	Crude oil; runs from Saudi Arabia to Sidon, Lebanon through occupied territory in the Golan Heights; does not transport beyond Jordan's northern border.
Iraqi Pipeline (closed)	Derelict line from Iraq to Haifa via Jordan.

7. Military capabilities.

a. Background. The Army of Israel was established by decree on 26 May 1948, 12 days after the Declaration of Independence. The army's creation laid the foundation of the emergence of a new state whose allotted territory was invaded by the regular forces of Egypt, Lebanon, Iraq, Syria, and Transjordan (now called Jordan) on the first day of Israeli independence. Israel survived this first conflict, and in subsequent wars, the Israel Defense Force (IDF) has repeatedly repulsed or defeated the armies of its Arab neighbors. The IDF has developed into a balanced and well-organized military structure. The IDF is considered to have one of the most effective and efficient mobilization capabilities in the world.

b. Command structure.

(1) The IDF has no commander in chief designated as such. The law establishing the army vests command in the government. The Minister of Defense acts as the highest authority over the IDF and is its link to civilian political authorities. This office is held by a civilian (though normally retired military). The highest ranking military officer, and the only officer to hold the rank of lieutenant general (rav sluf), is the Chief of Staff, who is also the chairman of the general staff and is responsible to the Minister of Defense for all IDF matters. In general, the Ministry of Defense is in charge of administrative and technical matters, while the general staff is in charge of "professional" matters, such as organization, training, and the planning and execution of military operations. As the Supreme Commander of the IDF, however, the Minister of Defense can intervene in all IDF matters ([Figure 2-12](#)).

(2) The general staff is organized along conventional lines. The general staff's permanent members are the heads of the five staff branches (operations, manpower, planning, quartermaster, and intelligence); the commanders of the Air Force, Navy, and functional commands; and the three area commanders of the ground forces. The head of the operations branch (or general staff branch as formally designated) is considered the second in command within the general staff after the Chief of Staff. This remains true even though a special post of deputy chief of staff is sometimes created. The general staff wields control over all branches of the IDF.

(3) The Navy and Air Force have never been designated as separate services. Officially known as the Israeli Sea Corps (Hel Yam) and the Israeli Air Corps (Hel Aviv), the Navy and Air Force enjoy a bit more autonomy within the IDF structure than their official designation would suggest. There is no single commander of the ground forces; rather, there are three area commanders with equal responsibilities in the northern, central, and southern regions of the country. In addition, the general staff supervises approximately 24 "functional commands," the most important of which are armor, paratroop, artillery, training, Nahal (paramilitary youth), and Gadna (youth battalions).

c. Armed Forces. The IDF is a unified force in which the Army, Air Force, and Navy are subordinate to a single Chief of Staff. Although the Minister of Defense acts as the Commander in Chief, a cabinet ruling of October 1973 formed the Defense Committee with authority to make decisions on military operations. The total peacetime strength of the Armed Forces is 141,000 personnel (93,300 are conscripts). The forces can mobilize 500,000 personnel of which 100,000 can report in about 24 hours. This has been a key to Israeli success in the past, with reserves constituting a bulk of the country's combat power.

d. Army. The Army's mission is to defend the Israeli landmass. The army's strength is approximately 104,000 (16,000 regulars and 88,000 conscripts). This includes 12,000 women. A reserve force of about 494,000 is available for mobilization. (The types of army units are listed at [Tables 20](#) and [21](#)).

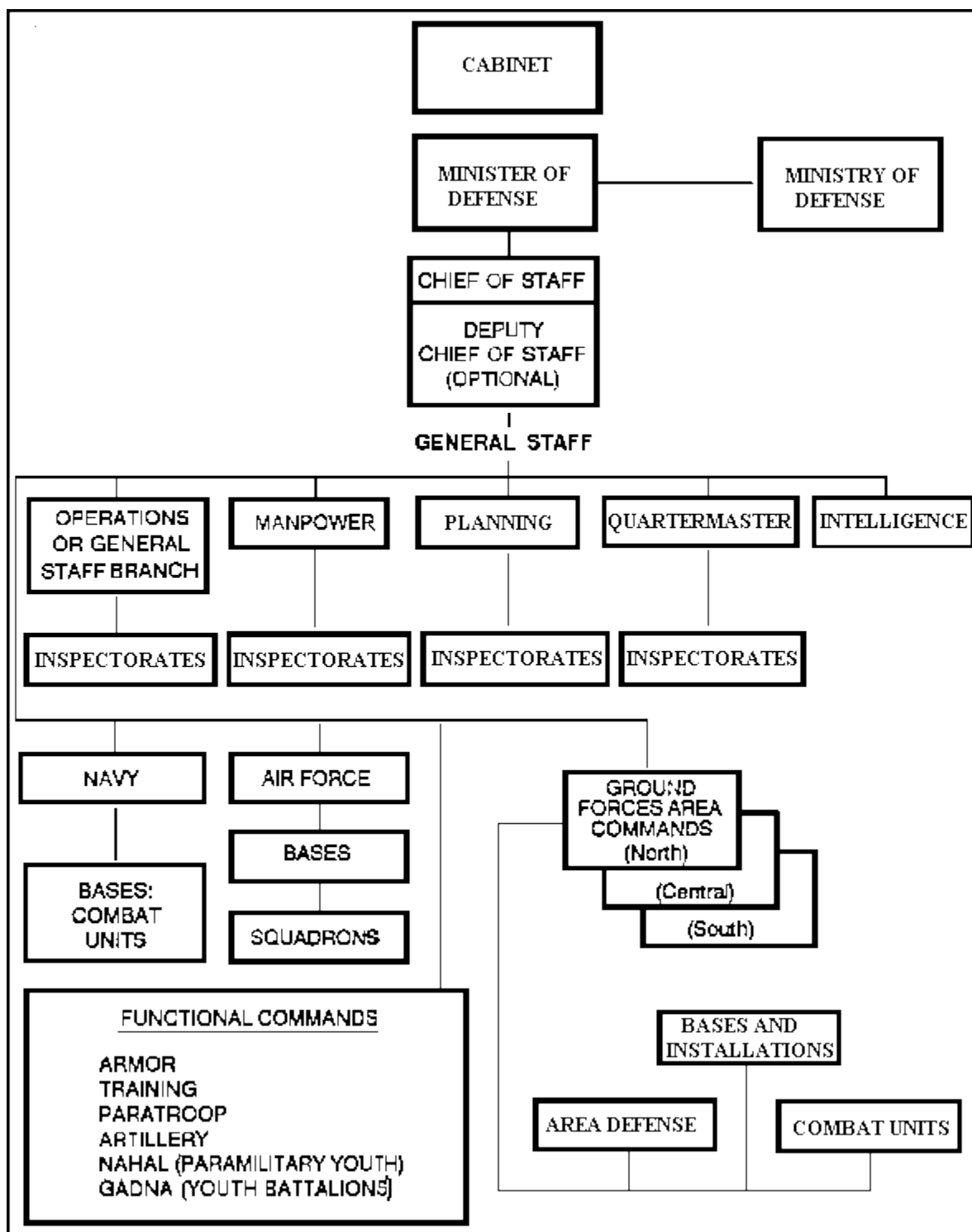


Figure 2-12. Israeli command structure.

Table 20. Israeli active Army units.

2 x Corps Headquarters (HQ)
3 x Armored divisions (Figure 2-13)
5 x Mechanized infantry brigades with 1 x paratroop trained battalion, 1 x battalion based in NCO school, and 1 x Nahal youth) battalion.
3 x Border defense infantry division HQ w/4 x brigades each
4 x Patriot SAM battalions (3 x US, 1 x German)
1 x Lance SSM battalion
3 x Artillery battalions

Table 21. Israeli reserve Army units.

9 x Armored divisions (Figure 2-14)
1 x Airmobile/mechanized infantry division (w/3 x brigades manned by paratrained reservists)
10 x Regional infantry brigades
4 x Artillery brigades

e. Air Force. The Air Force totals 28,000 personnel in peacetime, including 19,000 conscripts who are employed in the air defense sections; 11,000 reservists are added on mobilization. The mission of the Air Force is to conduct independent air attacks against enemy targets; participate in the defense of the country against hostile air action; and support the army and navy by air strikes, reconnaissance, air resupply, and transport. The Israel air force has 16 x interceptor/fighter ground attack (FGA) squadrons, 4 x FGA squadrons, 1 x reconnaissance squadron, 1 x transport wing, and 17 x air defense batteries.

f. Navy. The Navy totals over 9,000 personnel in peacetime, including 3,000 conscripts (with 300 marines designated as naval commandos); 1,000 reservists can be added on mobilization. The navy is charged with defense of the Israeli coastline and the support of army operations. Israel's Navy has 3 x submarines, 26 x missile craft, 63 x coastal patrol craft, 9 x landing craft, 2 x hydrofoils, 4 x Seascan Marine recon craft, and Bell Jet Ranger antisubmarine warfare (ASW) helicopters. Major bases are at Haifa, Ashdod, and Eilat ([Figure 2-11](#)).

g. Paramilitary forces. These forces include 6,000 border police and a coast guard (strength unknown) with 6 x patrol boats.

h. Forces abroad. Israel has 125 advisors and technicians stationed in Ethiopia. There is a contingency of Israeli troops in the buffer zone within Lebanon bordering Israel.

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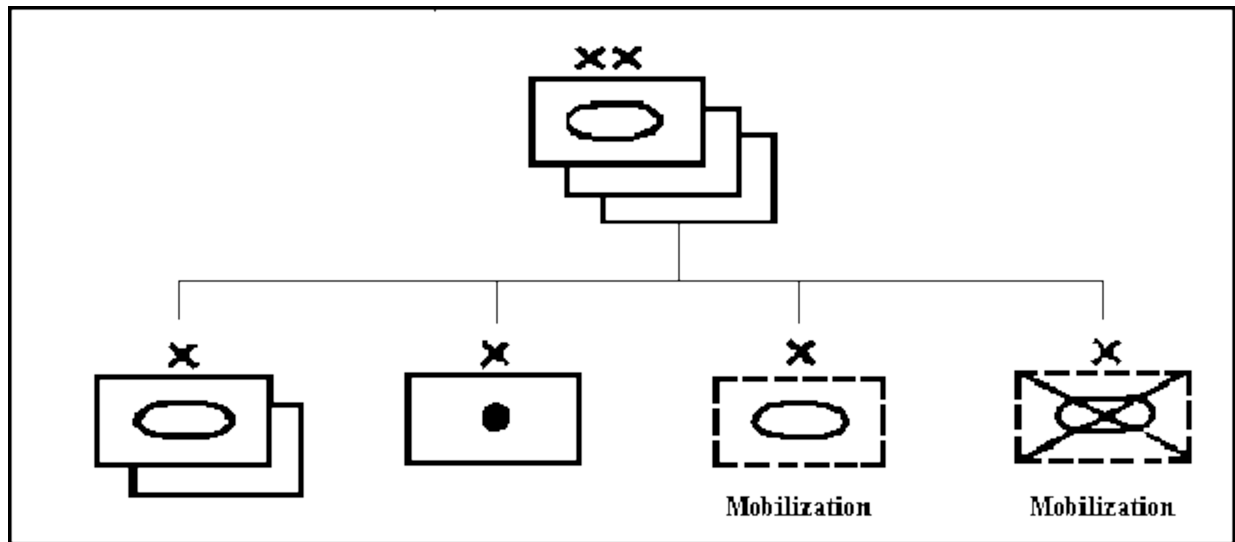


Figure 2-13. Israeli active armored division organizations.

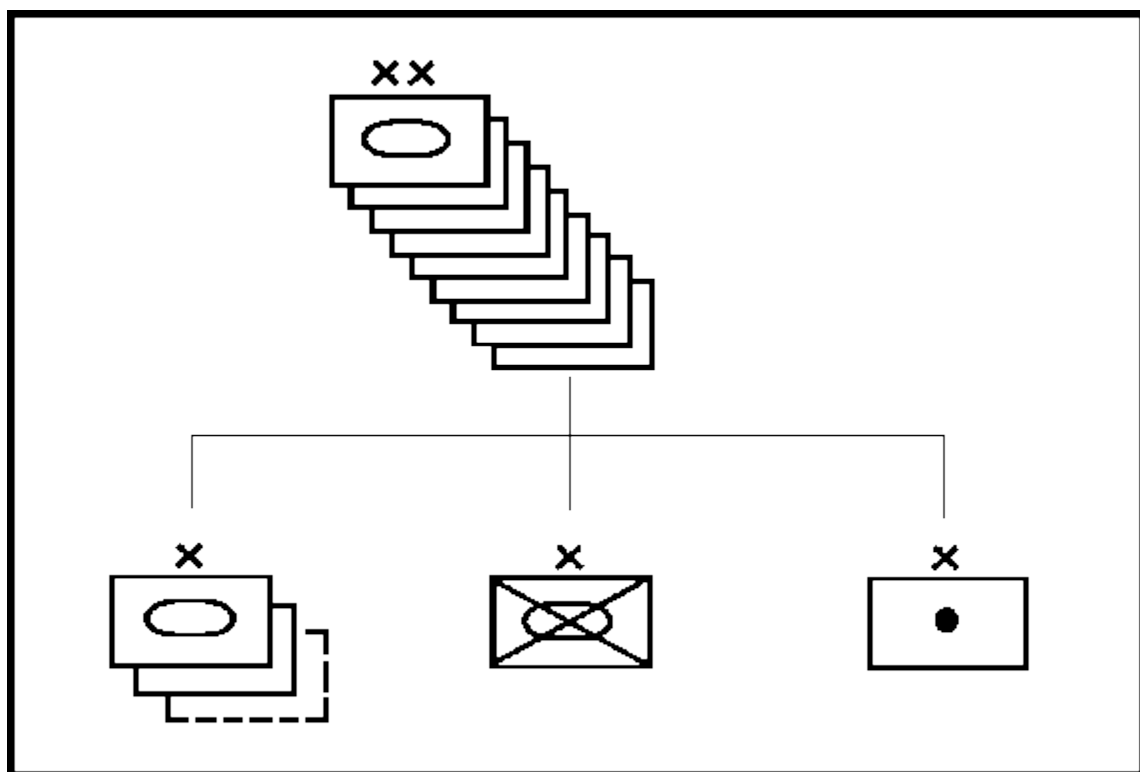


Figure 2-14. Israeli reserve armored division organizations.

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PART C: JORDAN

1. General information. Jordan (JOR d'n) is an Arab kingdom in the middle eastern area of southwestern Asia. This land of sandy desert, rocky plains, and green hills occupies part of ancient Palestine (presently under dispute with Israel). Jordan's arabic name is al-Mamlakah al Urdiniyah al-Hashimiyah, which is translated as the Hashemite Kingdom of Jordan. Hashim is the clan name of Jordan's kings. Amman is the capital and largest city. [Figure 2-16](#) is a country outline of Jordan.

2. Statistical Data.

Name:	Hasemite Kingdom of Jordan
Capital:	Amman
Population:	4,324,638 (July 1997)
Area:	89,213 km ²
Ethnic divisions:	Arab majority (98%), Circassian, and Armenian
Language:	Arabic, English is widely understood
Literacy rate:	86.6%; 90% in the 10-15 year age group
Religion:	93% Muslim, remainder are mostly Christian
GNP:	\$5.4 billion
Per capita income:	\$1,500
Unit of currency:	Jordanian dinar (JD)
Exchange rate:	\$1 = .709 JD
Time zone:	Two hours ahead of UTC; seven hours ahead of US Eastern Standard Time; time zone BRAVO
Defense forces:	Army, Air Force, Navy
Flag (Figure 2-15):	

(1) Scientists believe that people have lived in what is now Jordan since the Stone Age. In ancient times the eastern upland of Jordan was a great highway for camel caravans and armies. At various times local kingdoms flourished throughout the area. The greatest of these was the kingdom of Nabataeans. The Nabataeans controlled the trade between Arabia and Syria for their capital in Petra from 300 B.C. to 100 A.D.; they also at one time ruled Damascus, the capital of Syria. The Romans conquered Petra in 106 A.D., and Emperor Trajan formally annexed the Nabataean Kingdom. Trajan organized the Nabataean territory within the new Roman province of Arabia which includes what we now know as the East Bank of the Jordan. From then until the 1400s, wandering tribesmen roamed throughout most of the Jordan eastern uplands. After the early 1500s, Jordan became another territory of Southwest Asia controlled by the Ottoman Turks.

(2) British and Arab troops seized Palestine from the Ottoman Turks during World War I. After the war Great Britain received a League of Nations mandate (order to rule) over what is now Jordan and Israel. In 1921 Great Britain appointed Hussein as the emir of the eastern uplands of present day Jordan. The area was later called Transjordan. During the next 20 years, Transjordan gradually became independent of British control. Great Britain and Transjordan signed a 1946 treaty that recognized the complete independence of Transjordan. In May 1946 Transjordan's National Assembly proclaimed Abdullah as King. King Abdullah of Jordan and King Feisal I of Iraq were the sons of Sharif Hussein of Mecca. In WW I they fought alongside Lawrence of Arabia as leaders of the Arab Revolt.

(3) In 1948 the British ended their mandate over Palestine. Following the formation of the Israeli State, Transjordan and other Arab states became involved in the first Arab-Israeli conflict. The fighting ended in 1949 but not before 600,000 Palestinians fled into Transjordan. In 1950 the government changed the country's name to Jordan.

b. Recent history.

(1) In 1951 King Abdullah was assassinated by a PLO terrorist as he entered a mosque in Jerusalem accompanied by his teenage grandson, Hussein. Hussein therefore, has no love for Palestinians, but 60% of Jordans population are Palestinians so he has to keep them appeased to stay in power. King Abdulllah's son, Talal, became King but was unable to rule because of mental illness. The National Assembly deposed Talal and made his son, Hussein I, King. The country adopted a new, more democratic constitution and became a member of the UN in 1955. Jordan suffered considerably during the 1950s due to frequent conflicts with the Israelis. Because of Jordan's huge refugee problem, the UN, US, and UK provided economic aid. In 1958, King Feisal II of Iraq (Hussein's first cousin) was assassinated along with the rest of the royal family, by the Iraqi Army. Hussein should not feel friendly toward the Iraqis because of this. Next, in 1958 Jordan joined with Iraq to form the Arab Federation to counteract the United Arab Republic's influence in Southwest Asia. This alliance ended a few months later when nationalists overthrew the government of Iraq.

NOTE: Hussein and Feisal are/were aliens in their countries because they are Hashemites from the Hejay region of Saudi Arabia.

(2) War with Israel in 1967 resulted in Israeli occupation of Jerusalem and all of the West Bank. The Israelis have remained in these areas since that time. The Jordan Civil War began in September 1970, when Hussein ordered the Jordan Arab Army to attack the PLO and drive them from Jordan. In 1971 King Hussein mounted a major attack against Palestinian guerrilla bases in Jordan and succeeded in eliminating that long-standing problem. In 1974, however, King Hussein concurred in an Arab summit conference decision to recognize the PLO as the sole representative of the Palestinian people.

(3) Since the 1970s, Jordan's stance has been generally pro-western, and Jordan has maintained better relations with the more conservative Arab states. Jordan is at the heart of one of the most complex and charged issues in the whole Middle East problem--the future of the West Bank, Jerusalem, and the Palestinian refugees. The continuation of a stable and dependable regime in Jordan is of primary importance to the US in its efforts to assist in finding a just and lasting peace in the region.

(4) Subsidies from Iraq and Saudi Arabia have kept the country solvent, but the blockade against Iraq during the recent Gulf war has deeply damaged its economy. The high birthrate of resident Palestinians has put an additional strain on the kingdom. During the recent Gulf war, Jordan sided with Iraq, which is not favorably considered at this time.

JORDAN History

Jordan's moderate, pro-western orientation remains important to U.S. strategy in the region. Jordan's relationship with the U.S. has steadily improved since the Gulf War when Jordan took an unpopular pro-Iraqi stance. On 26 October 1994, King Hussein signed a peace treaty with Israel, formally ending over four decades of war. Jordan has also encouraged the Palestinians to continue negotiations with Israel. Jordan has made a significant military contribution to the international peacekeeping effort in the former Yugoslavia, and has largely regained its position as a voice on moderation and reason in the region. In addition, Jordan has posted an excellent human rights record, and is one of the few countries in the region willing to grant expatriate Palestinians the full rights of citizens.

Although it has proved to be financially and logistically difficult, Jordan is attempting to enforce UN sanctions against Iraq, formerly its largest trading partner. The U.S. continues to work closely with Jordanian officials to devise procedures to minimize the adverse effects the inspection process has on the Jordanian economy.

As a result of improved relations, the U.S. security assistance relationship with Jordan has been expanded. The program's hiatus had seriously degraded Jordan's military capability, and the U.S. is working to help them achieve an improved state of readiness. An important component of this program is the renewal of the combined U.S.-Jordanian exercise program, which has returned to pre-Gulf War levels.

4. Weather.

a. Climate. Jordan's climate is generally a contrast between a rainy season from November to April and very dry weather the rest of the year. The country has a Mediterranean climate with uniformly cool winters, during which practically all of the precipitation occurs, and hot, dry summers ([Table 22](#)). In Jordan seasonal temperature variations are greater and rainfall is less the further a person travels inland from the Mediterranean Sea. Atmospheric pressures during the summer months are relatively uniform, whereas the winter months are marked by a succession of low pressure systems and accompanying cold fronts. These winter wind storms generally move eastward over the Mediterranean Sea several times a month and result in sporadic precipitation. Climatically, Jordan is divided into four regions: desert, cultivated plains, Jordanian highlands, and the Jordan Valley.

Table 22. Annual temperatures °C.

<u>REGION</u>	<u>WINTER</u>	<u>SUMMER</u>	<u>EXTREMES</u>
	MIN MAX	MIN MAX	MIN MAX
Desert	8° 18°	20° 38°	-15° 49°
Cultivated Plains	2° 13°	18° 32°	-7° 46°
Jordan Highlands	0° 10°	12° 25°	-9° 43°
Jordan Valley	7° 18°	24° 38°	-2° 48°

(1) The desert regions of the East Bank receive less than 12 cm of rain a year. Rain normally falls in the form of brief, but violent local winter rainstorms. Nights are clear in the summer; about one third are cloudy in the winter.

(2) In the cultivated plains there is adequate rainfall for agriculture, but the amount and occurrence is highly erratic from year to year. Snow frequently falls in the Amman area.

(3) In the Jordanian highlands, precipitation averages about 50 cm in the north and 30 cm in the south. The winter rainfall commonly lasts up to three days at a time and varies from gentle showers to the more frequent violent cloudbursts. Snow occurs at the higher elevations. Most nights are clear during the summer, whereas more than half are cloudy in winter.

(4) The Jordan Valley, lying in the shelter of the West Bank high ground, forms a narrow climatic zone that annually receives up to 30 cm of rain in the northern areas and less

than 12 cm at the head of the Dead Sea. Nights are clear in the summer, one third are cloudy in the winter.

(5) For about a month before and after the summer season, hot dry air from the desert, drawn by low pressure systems, produces strong south or southwest winds that can reach gale force. This dry sirocco-style wind, known as "khamsin" among other names, is usually accompanied by great dust clouds. At its onset, the khamsin is preceded by a hazy sky, a falling barometer, and a drop in relative humidity to about 10%. Within a few hours there may be a 10° to 15° C rise in temperature. These windstorms ordinarily last a day or so, and cause much discomfort and crop destruction.

(6) The "shamal" is another wind worthy of note; this wind generates from the north or northwest in intervals between June and September. Originating as a dry continental mass of polar air, the shamal is warmed as it passes over the Eurasian land mass. The dryness allows intense heating of the earth's surface by the sun, resulting in high daytime temperatures that moderate after sunset. Remarkably steady during daytime hours, but breeze-like at night, the shamal may blow for as long as 9 out of 10 days, stop and then repeat the process.

b. Light table. Light tables reflect the average times, by month, for sunrise and sunset. General outlines may be visible at the times shown in [Table 23](#), but the horizon is not likely to be distinguishable.

5. Terrain. The territory of Jordan totals about 90,650 km², excluding the West Bank area. The country is landlocked except at the southern tip where nearly 26 km of shoreline along the Gulf of

Table 23. Light table.

<u>AMMAN, JORDAN</u>											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>SUNRISE</u>											
0637	0630	0604	0525	0450	0431	0433	0451	0511	0530	0552	0618
<u>SUNSET</u>											
1643	1710	1734	1736	1816	1837	1846	1833	1800	1721	1647	1632

Aqaba provides access to the Red Sea. Jordan is bounded by Syria to the north, Iraq to the east, Saudi Arabia to the east and south, and by the Gulf of Aqaba and Israel to the west. Except for small sections of borders shared with Israel and Syria, Jordan's international boundaries do not follow well-defined or natural features of the terrain ([Figure 2-17](#)). These boundaries were established by various international agreements and, with the exception of the Israeli border, are not in dispute.

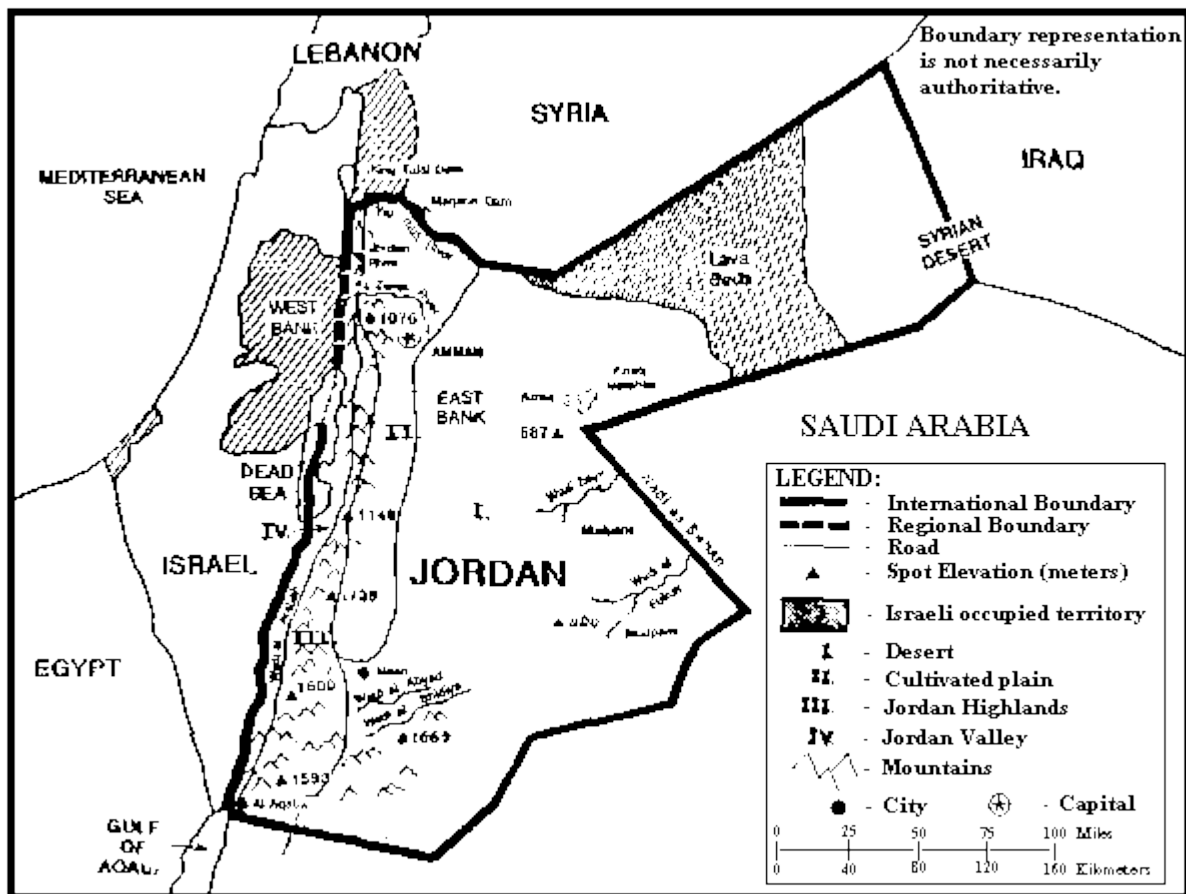


Figure 2-17. Terrain features and natural regions of Jordan.

a. Terrain features. The country consists mainly of a high plateau, which is divided into ridges by valleys, gorges, and a few mountainous areas. Fractures of the earth's surface are evident in the great geological rift that extends from the Jordan Valley through the Red Sea southward, gradually disappearing south of the lake country of East Africa. Jordan consists of 88% desert waste and urban areas, 11% agricultural land, and 1% forest. There are four major terrain regions-- the desert, the cultivated hills and plains, the Jordanian highlands, and the Jordan (Rift) Valley.

(1) The greatest part of the East Bank is desert, which displays the land forms and other features associated with great aridity. Most of the land is part of the great Syrian Desert. There are broad expanses of sand, sand dunes, and salt flats, particularly in the south and southeast. Occasional clumps of sandstone hills or low mountains averaging over 900 m high support only meager and stunted vegetation that comes to life for a short period after the scanty winter rains. The drainage network is coarse and incised. In many areas the land relief provides no eventual outlet to the sea, resulting in the accumulation of sedimentary deposits in basins where moisture evaporates or is absorbed in the ground. Toward the depression in the western part of the East Bank, the desert rises and gradually becomes the Jordanian highlands. The area is sparsely populated but is traveled extensively by nomads. In the northern portion of the desert region, there is a continuous expanse of extinct volcanoes and lava fields. The lava flow of these fields

resembles hills dissected by gullies. Rugged rock outcrops and boulders up to several feet in diameter dot the terrain. Water is available throughout the region in wells, cisterns, and springs that may be 24 to 32 km apart along major trails. Springs are located along the valley slopes of the wadis.

(2) The cultivated hills and plains form a long, narrow triangle with a base in the extreme north that extends almost to Maan. The region consists of flat to rolling plains with scattered hills. There is extensive cultivation in this region supported by water from numerous canals and ditches. This triangle also contains most of the urban areas and towns. Water is available in marshes, springs, and pools as well as in wells and cisterns along trails and in populated areas.

(3) The Jordanian highlands is a steppe region of high, deeply cut limestone plateaus with an average elevation of 900 m; occasional summits reach 1,200 m in the north and over 1,500 m in the south. The western edge of this plateau area forms an escarpment along the eastern side of the Jordan River-Dead Sea depression and along the continuation of the depression south of the Dead Sea. Most of the wadis that provide drainage from the plateau into the depression carry water only during the short season of winter rains. The wadis are sharply incised with deep, canyon-like walls which, wet or dry, present formidable obstacles to travel. The area is only moderately populated. Water is available from numerous streams, springs, and wells in the north and in pools after winter rains to the south.

(4) The Jordan Valley is a flat-to-gently-rolling floor flanked by hills and mountains. The Jordan River flows through the valley from mountain headwaters 161 km north of the river's mouth at the Dead Sea. The river drops from an elevation of 3,000 m above sea level to 435 m below sea level. The principal tributary of the Jordan is the Yarmuk River, which forms the boundary between Israel on the northwest, Syria on the northeast, and Jordan on the south. The Az Zarqa River, the second main tributary of the Jordan, rises and empties entirely within the East Bank. The perennial streams and rivers which flow primarily from the east vary from 2 to 75 m in width and are 1 to 2 m deep throughout the year. The streams decrease southward and the area is extremely dry in summer. The Dead Sea, located in the middle of the western border, occupies the deepest depression in the earth's land surface. The depth of the depression is accentuated by the mountains and highlands which parallel the depression.

(5) These highlands rise to elevations of 800 to 1,000 m above sea level. Toward the southern end of the depression, a narrow peninsula juts from the east to divide the Dead Sea into a larger and much deeper northern basin with a shallow southern basin scarcely 3 m deep. The entire body of water is some 80 km long and has a maximum width of slightly over 10 km. South of the Dead Sea about halfway to the Gulf of Aqaba, a continuation of the depression known as the Wadi al Arabha rises gradually in elevation to sea level as the wadi winds through a barren desert. The wadi continues to rise to an elevation of 300 m above sea level about 654 km from the gulf. At the summit there is a

divide between drainage lines running north to the Dead Sea and south to the Gulf of Aqaba. Trafficability in Jordan is evaluated in [Table 24](#).

Table 24. Trafficability.

<u>REGION</u>	<u>TRACKED VEHICLES</u>	<u>WHEELED VEHICLES</u>	<u>REMARKS</u>
Desert	Good to excellent depending on local surface conditions. Mud pans, salt flats, and lava beds may be impassible. Extremely broken terrain may hamper rapid movement in some areas.	Good to poor depending on local surface conditions. Road system is inadequate to support large scale operations.	See FM 90-3 , Desert Operations.
Cultivated Plains	Good with occasional requirement for fording or bridging to cross canals and irrigation ditches. Marshy areas are impassable.	Good, with some variation for local surface conditions.	
Jordanian Highlands	Fair, due to wadis which compartment the areas. Steep wadi walls severely restrict mobility for large scale operations.	Poor, except on existing road network.	
Jordan Valley	Good to excellent through dense population, cultivated areas, and groves will hamper large scale maneuvers; southern area is drier and less populated and developed.	Good, both cross-country and on existing roads.	

b. Urban areas. Major urban centers are a relatively new concept to Jordanians. Amman, the capital and major city of the East Bank, has ancient ties, but as a modern city it is scarcely more than a generation old ([Table 25](#)).

c. Coasts and beaches. Jordan has only 26 km of coastline on the Gulf of Aqaba and claims 3 nm as the limits of its territorial waters ([Table 26](#)).

Table 25. Urban areas.

<u>CITY</u>	<u>REMARKS</u>
Amman	Population-694,400; capital, commercial, industrial, and cultural center; built on seven rather steep hills averaging 152 m; broad streets; new exterior sections are flatter with gentle slopes; center of a network of new roads.
Az Zarqa	Population-238,200; main industrial center.
Irbid	Population-121,600; main industrial center.
Al Aqaba	Population-20,000; only seaport; surrounded by rugged, stark mountains; new industrial center planned.

Table 26. Coast and beach access.

<u>AREA</u>	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
Gulf of Aqaba	This coastal area is suitable only for access to Al Aqaba itself and is remote from other areas of the country.	The Gulf of Aqaba is an extremely restricted waterway with many choke points, unsuitable for operations larger than small raids.

6. LOCs.

a. Most freight and passenger traffic moves on the highway system which links the populated parts of the country. All cities and most towns are connected by two-lane paved roads in excellent condition. The road network and main routes are described in [Table 27](#). [Figure 2-18](#) depicts the locations of the roads.

b. Railroads. The Hedjaz Jordan Railroad is administered by the Ministry of Transport. [Figure 2-18](#) locates the railway routes. The Hedjaz originally ran from Turkey through Syria and Jordan to the holy city of Medina in Saudi Arabia; some sections of this line, however, have been destroyed. [Table 28](#) identifies the rail network. [Table 29](#) identifies the main routes of the railroad.

c. The only major Jordanian port is Al Aqaba located 11 km from the Al Aqaba airport ([Figure 2-19](#)). Since the reopening of the Suez Canal, the Al Aqaba port facility has been expanded to

handle the increased demands placed upon it. Al Aqaba consists of two ports: a general cargo port with a capacity of 4.5 million tons a year and a phosphate port with a capacity of about 4 millions tons a year. Facilities available at Al Aqaba include six deep-water general cargo berths, three shallow berths, two bulk export berths for phosphate, and two floating berths with a roll-on/roll-off capability. Full provisioning is available.

Table 27. Roadways.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Amman-Ar Ramtha Deraa (Syria)	94 km	None
Amman-Al Mafraq-Baghdad (Iraq)	875 km	None
Amman-Maan-Tabuk (Saudi)	438 km	None
Amman-Maan-Al Aqaba	335 km	Desert highway; transit time 5 hours; 7% grade between Al Aqaba and Maan.
Amman-Allenby Bridge-Jerusalem (Israel)	88 km	Bridge is open daily from 0700 to 1300 except Saturdays.
Amman-As Salt-Damiya Bridge-Nabulus (West Bank)	93 km	Bridge is open daily from 0700 to 1300 except Saturdays.

Table 28. Railroad network.

Rail Headquarters:	Hedjaz Jordan Railroad Ministry of Transport Amman, Jordan
Narrow Gauge:	1.05 m
Single Track:	676 km
Motive Power:	15 steam locomotives 15 diesel locomotives
Rolling Stock:	6 passenger coaches 359 freight cars

Table 29. Railway routes.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>
Amman-Maan-Saudi border	333 km
Amman-Maan-Al Aqaba	331 km
Amman-Al Mafraq-Deraa (Syria)	76 km
*Railroad is single track and narrow gauge for its entire length.	

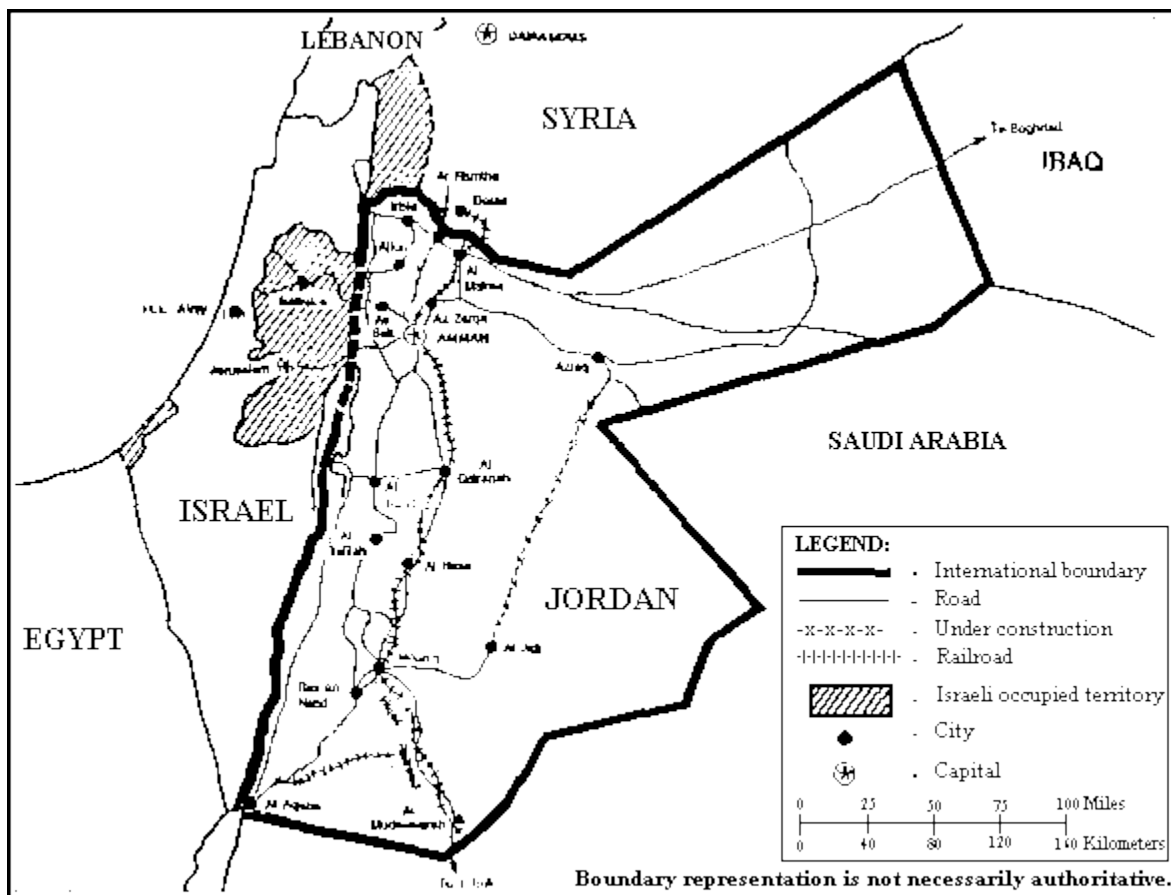


Figure 2-18. Roads and railroads of Jordan.

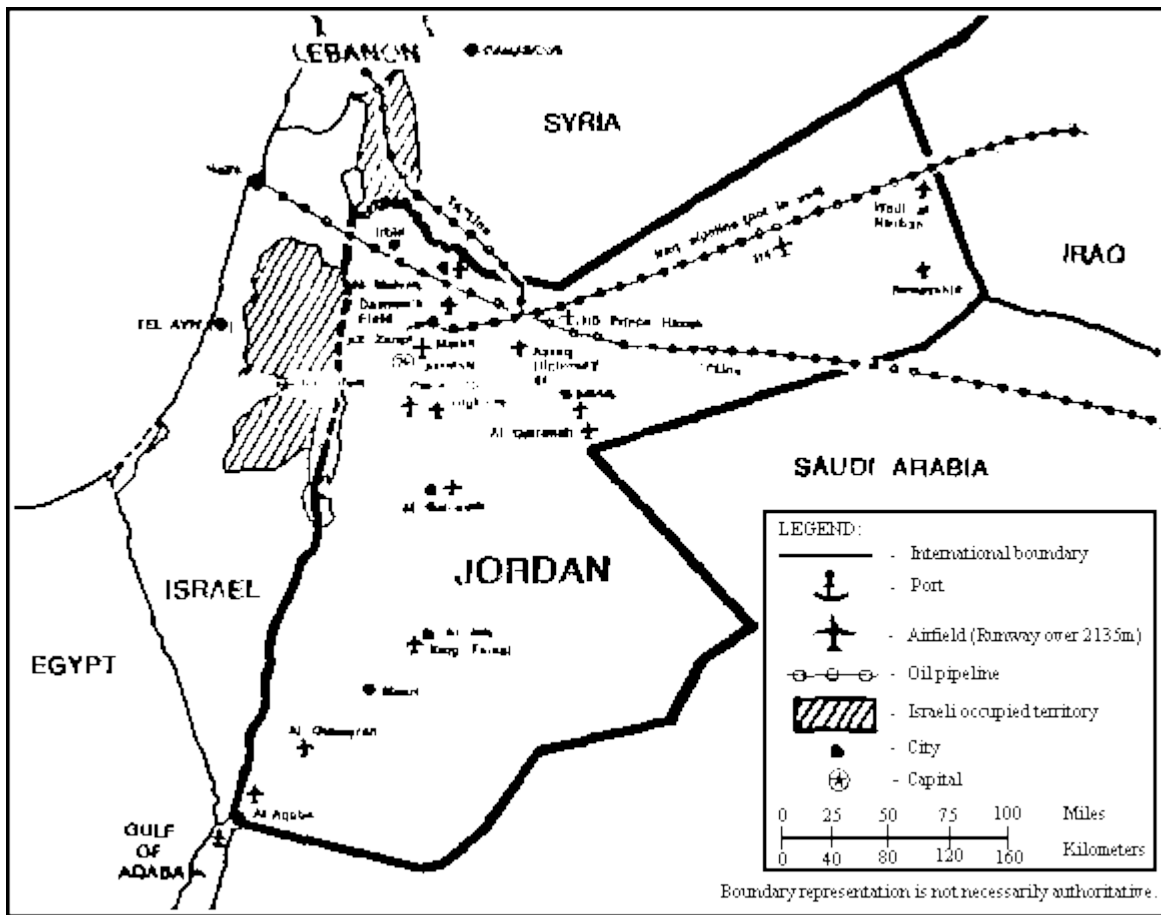


Figure 2-19. Ports, airfields, and pipelines of Jordan.

d. Air transportation. The Jordanian air network is depicted in [Table 30](#) and airfield locations are identified in [Table 31](#). Jordan has two international airports besides its other airfields (see [Table 31](#)). Queen Alia International handles the majority of traffic.

Table 30. Air transportation network.

<u>AIRFIELDS</u>	<u>25 (21 USABLE)</u>
Runway Type	
Permanent surface	16
Unpaved fields and usable airstrips	5
Unusable airstrips	4
Runway Length*	
Over 3,600 m	2

2,400-3,559 m	13
1,220-2,439 m	3
Under 1,220 m	3
*Runway lengths are for permanent surface and unpaved airfields only	

e. Water transportation. The Jordan River is not navigable and is not considered a significant obstacle except during the winter season.

f. Pipelines. The Jordanian pipeline system totals 209 km and consists of the Trans-Arabian Pipeline (TAPLine) from Saudi Arabian fields across northeast Jordan to the Mediterranean coast in Lebanon, and a spur which leads from the TAPLine to the refinery established at Az Zarqa ([Figure 2-19](#)). Refined products are distributed by tanker trucks. Although the TAPLine has been frequently shut down in the last 10 years for a variety of reasons, oil has continued to flow as far as Jordan. A derelict pipeline, shut down since 1948, passes through Jordan between Iraq and Haifa, Israel.

Table 31. Airfields.*

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
Al Gahdaf	Highway emergency field; 27 km SE of Azraq; Royal Highway Strip Jordanian Air Force emergency deployment facility.
Al Qatranah	Highway emergency field; 18 km E of Al Qatranah; Highway Strip Royal Jordanian Air Force emergency facility.
Al Quwayrah	Highway emergency field; 45 km N of Al Aqaba; Royal Highway Strip Jordanian Air Force emergency facility.
Al Aqaba International	Civil aviation terminal; 9 km N of Al Aqaba; one 3,000 m asphalt runway; sited in wadi with mountainous terrain to east; used by domestic commercial aircraft.
Azraq Highway Strip	Highway emergency field; 46 km NW of Azraq; Royal Jordanian Air Force emergency facility.
Dawson's Field	Military facility; 43 km NE of Amman; seldom used; landing

area suitable for dispersal, staging or aircraft recovery.

H-4 New	Military field at H-4 pumping station; 184 km E of Al Mafrag; one 2,500 m asphalt runway; sited on sand and basalt desert; designed as fighter airfield; formerly used by Iraqi MiG 21 squadron; presently used as dispersal area.
Highway H Strip	Highway field; 31 km SE of Amman; one 2,250 m sand runway; probably used for crop dusting or other agricultural purposes.
King Faisal	Military field; 46 km ENE of Maan; new field being completed; 2 batteries of Hawk missiles operational; also known as Al Jafr; no further unclassified information.
King Hussein	Military field; 4 km NE of Al Mafrag; one 3,000 m asphalt runway; sited on level desert; operational base for three Royal Jordanian Air Force squadrons; underground operations center; also known as Mafrag New.
Marka	Military field; just ENE of Amman; one 3,100m asphalt runway; sited in a developed area; also known as King Abdullah Air Base; no further unclassified information.
Prince Hasan (H-5)	Military field; 4 km from H-5 pumping station; also known as H-5; no further unclassified information.
Queen Alia International	Major civil terminal; 27 km S of Amman; one 3,660 m asphalt and one 3,660 m concrete runway; sited in flat desert; used by domestic and international traffic. Military controlled field; 82 km E of H-4 pumping station; no further unclassified information available.
Shaheed Mwaffaq	Military field; 5 km SE of Azraq; one 3,000 m asphalt runway; sited on level desert plain; also known as Azraq.
Wadi al Murbah Highway Strip	Highway emergency field; 74 km NE of H-4 pumping station on Baghdad-Haifa highway; one 3,030 m asphalt unway;

sited on rolling terrain; used for emergency dispersal/recovery.

*Runway length 2,134 m or longer.

7. Military capabilities.

a. Background.

(1) The Jordanian Armed Forces, formed by the United Kingdom after World War I, combined a police force of about 300 men with approximately 1,000 military personnel from various military units. The Jordanian Armed Forces were originally known as the Bedouin Arab Army. In English, however, it was known as the Arab Legion, a designation which lasted until 1956. From inception the Arab Legion's mission was to enhance the establishment of a central governmental authority through the maintenance of public order and the preservation of internal security.

(2) During the 1948 Arab-Israeli war, the Legion's strength quickly expanded to approximately 10,000 of which 4,500 were combat troops. Combat efficiency and strengths increased more after the 1948 war when the Jordanian Armed Forces became a real symbol of power in Southwest Asia.

(3) By early 1956, King Hussein began to reorganize the Armed Forces and establish the Royal Jordanian Air Force. In the following year the Jordanian Armed Forces steadily grew and modernized, enabling them to participate in the Arab-Israeli wars (except the 1956 and 1973 wars) in a commendable fashion. Observers were prompted to remark that "Jordan is really an army with a country attached to it."

b. Command structure ([Figure 2-20](#)).

(1) The defense structure is headed by the King who is the Supreme Commander of all Jordanian Armed Forces. The senior military officer is answerable to the Minister of Defense, the Prime Minister, and the King, in that order. Reporting to the senior military commander is the chief of staff who heads a general staff. As a Sandhurst-trained (British) officer and qualified test pilot, the King devotes most of his attention to military matters and personally approves all promotions and transfers. The command channel from division headquarters is directly upward to the headquarters of the general command and downward through the pyramid of subordinate divisional units. Divisions usually have three brigades, and each brigade has three battalions. Despite years of American training, traces of British military concepts remain, especially within specific units, i.e., British forms elite infantry units that have also been trained for deployment as paratroops. One of these units, the Royal Guards Battalion, is stationed in Amman where it serves as bodyguard for the King and the royal family. The combat professionalism and unquestioned loyalty of these troops have been credited with thwarting repeated attempts on King Hussein's life.

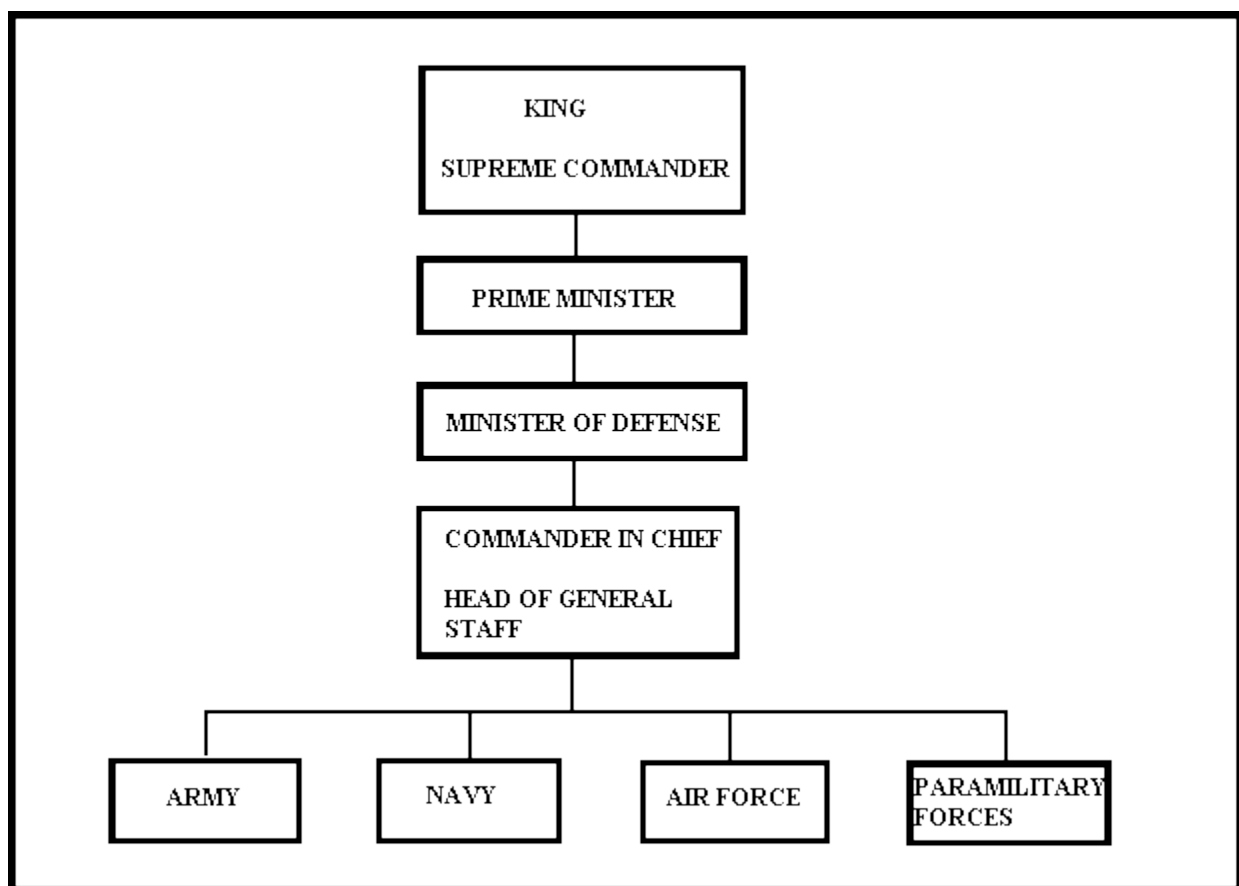


Figure 2-20. Jordanian Armed Forces command structure.

(2) The quality of training offered by Jordan's army schools has been sufficiently high to attract hundreds of military officers and enlisted personnel from neighboring Arab countries. Since 1974 increasing numbers of spaces in the classes conducted each year have been made available to army and air force personnel of Saudi Arabia, Syria, Iraq, UAE, Bahrain, Qatar, Oman, and Kuwait. In addition, Jordan has sent at least one training mission of officers to Kuwait. In 1976 a senior Jordanian army officer was appointed as the first Chief of Staff of the UAE Armed Forces. Jordan has military advisors in Lebanon, Morocco, UAE, Kuwait, Oman, Bahrain, Qatar, and Iraq. A brigade of volunteers is in Iraq in support of the Iraqi Army.

c. Armed Forces. The branches of the Armed Forces include the Army, Air Force, Navy, and a paramilitary force. Military service is both voluntary and conscription. The defense structure is headed by the King who exercises his command in a personal and direct manner. He is the Supreme Commander of the Armed Forces with the constitutional right to declare war, decree peace, and sign treaties. The total peacetime strength is approximately 85,000. Reserves are 35,000 for all services.

d. Army. The Army, whose mission is to defend the Jordanian landmass numbers 90,000 personnel. Army units are listed by type at [Table 32](#).

Table 32. Jordanian Army units.

2 x Armored divisions ([Figure 2-21](#))
2 x Mechanized infantry divisions ([Figure 2-22](#))
1 x Independent Royal Guards brigade
1 x SF brigade with 3 x airborne battalions
1 x Field artillery brigade

e. Air Force. The mission of the Air Force is to conduct independent air attacks against enemy targets, to participate in the defense of the country against hostile air action, and to support the Army and Navy by air strikes, reconnaissance, and air resupply and transport. The Jordanian Air Force numbers 8,000 regulars. Despite the Air Force's title and semiautonomous status, air units continue to be considered as elements of the army. Jordan's Air Force has 4 x FGA squadrons, 2 x fighter squadrons, 1 x transport squadron, and 1 x Royal flight detachment.

f. Navy. Jordan's Navy, whose function is more like that of the US Coast Guard, is small. Its 600 regulars maintain a fleet of 10 patrol craft, all based at Al Aqaba. The navy has no aviation assets.

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g. Paramilitary forces. The civil militia "peoples army" numbers 15,000 + (men 16-65, women 16-45) and functions much the same as the US National Guard during crisis situations. Additionally, Jordan has about 17,000 in the Public Security Department (Ministry of Interior).

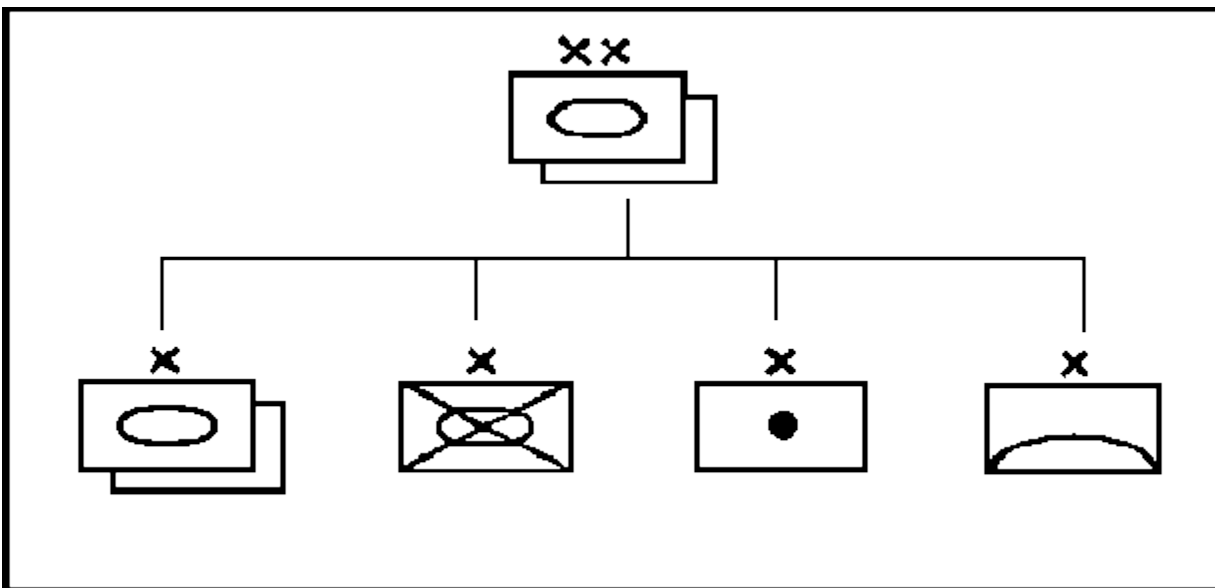


Figure 2-21. Jordanian armored division organization.

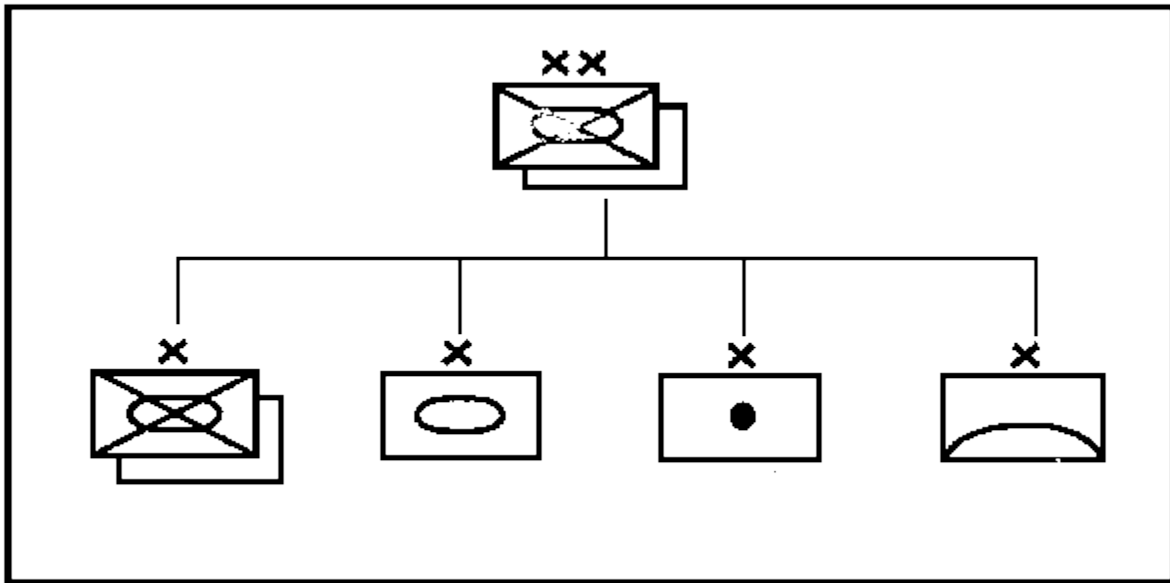


Figure 2-22. Jordanian mechanized infantry division organization.

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PART D: LEBANON

1. General information. Lebanon (LEB uh nuhn) is a small, independent republic at the eastern end of the Mediterranean Sea. The country's name is derived from the snow capped Lebanon Mountains, which cut through the country from north to south. The country is called Al-Jumhuriyya al-Lubnaaniyya in Arabic. Beirut is Lebanon's capital and largest city. Figure 2-24 is a country outline of Lebanon.

2. Statistical Data.

Name:	Republic of Lebanon
Capital:	Beirut
Population:	3,449,578 (July 1997)
Area:	10,400 km ²
Ethnic divisions:	95% Arab, 4% Armenian, and 1% other
Language:	Arabic (official), French widely spoken, Armenian, and English
Literacy rate:	92.4%
Religion:	30% Christian, 70% Muslim and Druze, and 1% other
GNP:	\$3.6 billion
Per capita income:	\$700
Unit of currency:	Lebanese pound (LP)

Exchange rate: \$1 = 1,550.8 LP

Time zone: Two hours ahead of UTC; seven hours ahead of US Eastern Standard Time; time zone BRAVO

Defense forces: Army, Air Force, Navy paramilitary, militias, and foreign forces

Flag ([Figure 2-23](#)):



Figure 2-23. Flag of Lebanon.

3. History.

a. Historical background.

(1) Although the establishment of the state of Lebanon is recent, its inhabitants have a long history associated with Southwest Asia. Lebanon was once the site of the ancient kingdoms of the Hittites and Aramaeans. Later Lebanon was occupied by the Phoenicians, Assyrians, Babylonians, Persians, Greeks, and Romans before being integrated into the Byzantine Empire.



Maronite Christians established themselves in the area well before the spread of Islam in the seventh century. From 1516-1517 Lebanon and Syria were absorbed into the Ottoman Empire.

(2) During the 1841-1864 period, European governments intervened with the Ottoman sultans for the appointment of a pro-Christian government in Lebanon following a widespread massacre of Christians by Islamic Druze. The collapse of the Ottoman Empire in 1918 resulted in an Anglo-French force occupying Lebanon. In 1920 France was awarded the Levant Coast (today's Syria and Lebanon) as an official mandate. The Levant had been part of the Ottoman province of Syria. Shortly thereafter the French split their mandate into two separate regions, Syria and Lebanon. (This is the reason Syria claims Lebanon as its lost province which provides the basis for involvement of Syrian troops in Lebanon's 1974-1991 Civil War). In 1926 the French approved a constitution for Lebanon, but after a presidential election in 1932, the French suspended the constitution. British and Free French forces occupied the Levant in 1941 and under British pressure the Free French restored the constitution in March 1943. The French had imprisoned Lebanese officials, but due to mounting Allied and Arab pressure, they were released on 22 November 1943 (Lebanese Liberation Day). It was not until 1946, when French troops totally withdrew, that Lebanon became truly independent.

b. Recent history.

(1) Lebanon's government has shown great instability and has been characterized by collapses in times of crisis. The root cause of this was the National Pact of 1943, which was ratified by the Christian and Muslim sectarian groups. The National Pact stipulated that representation in government would be determined along sectarian lines based upon the 1932 census (last official census in Lebanon). Since the Christians were in the majority, they would hold the presidency and would hold a six-to-five ratio over the Muslims for division of parliamentary seats, civil service and military positions. The Sunni Muslims being the largest Muslim sect would hold the prime minister's post and the Shiite Muslims being the least numerous would hold the post of president of the chamber of deputies. Parliamentary representatives (elected to four year terms) would elect the republic's president (for a six year term). The first two parliamentary elections were so badly rigged and manipulated, that President Khouri was forced to resign before his second term had expired. Khouri was replaced by President Chamoun, the opposition's choice, but he too was forced to resign because he was too pro-Western for the openly pro-Nasser, anti-imperialistic, public sentiment. During the last months of President Chamoun's term in 1958, an insurrection aggravated by external factors broke out. During the insurrection US forces were sent to help the country safeguard its independence. It was only after the inauguration of President Chehab and a general improvement in the internal affairs of the country that the US Army and US Marines were withdrawn.

(2) During the Jordanian Civil War (1970-1971) 250,000 Palestinians (including Palestine Liberation Army (PLA) forces) fled Jordan and they entered southern

Lebanon, where they were welcomed by Shiite Muslims as liberators. However, after two to three years of Palestinian takeovers of Shiite businesses, farms, and homes of formerly peaceful Shiites became militant and they formed militias to fight against the PLA. This conflict coupled with growing clashes between Christians and Muslims led to the outbreak of the Lebanese Civil War in 1975. In April 1975 a bus load of Palestinians was ambushed by Christian gunmen in the Christian sector of Beirut. This incident touched off a full scale civil war. The war continued until 1976 when six Arab states, led by Saudi Arabia, prepared a peace plan calling for a cease-fire and the formation of an Arab League peacekeeping force. The plan temporarily terminated the civil war, except in southern Lebanon where Christians and Palestinian guerrillas continued to clash.

(3) In 1982, after several Palestinian rocket attacks into Israel and retaliatory Israeli airstrikes against Palestinian positions in Lebanon, Israel invaded southern Lebanon (Litani incursion). The Israeli attack was directed at PLO positions south of the Litani River in southern Lebanon. Following the defeat of the PLO forces, the Israelis established a "Security Zone" along the Israeli border and have maintained security forces in southern Lebanon ever since.

(4) On 23 August 1982, Bashir Gemayel was elected President of Lebanon and was assassinated within three weeks of his election. During August 1982 a UN peacekeeping force, consisting of US Marines, French, and Italian troops, was sent into Lebanon to assist in the evacuation of the PLO. In November 1982, the role of the marine peacekeeping force was expanded to include airport security and patrol duty in and around Beirut. Before the withdrawal of these forces in early 1984, terrorist attacks caused heavy casualties among the multinational forces.

(5) Syrian forces entered Lebanon in 1976 as part of the Arab League peacekeeping force. Syria has used this involvement as an excuse for their continued presence in Lebanon and they have been the dominant force in northern Lebanon and the Bekaa Valley. During Operation Desert Shield while the world's attention was focused on Kuwait, the Syrian Army moved against the Christian militia in Beirut and forced their leader into surrender. They then moved against the other warring militias and coerced them into surrendering their weapons. Tension still continues in Lebanon, but the Syrians have brought a measure of stability to the country. There is now hope of new elections and a promise of a more equitable distribution of representation for the sectarian factions. (By the outbreak of the Civil War the Shiites had become the majority faction, while the Christians had become the minority faction. However, representation in government was still based upon the 1932 census in accordance with the National Pact of 1943).

4. Weather.

a. Climate.

(1) Lebanon has a Mediterranean climate characterized by a long, hot, dry summer and a cool, rainy winter. Fall is a transitional season characterized by a gradual decrease in

temperatures ([Table 33](#)) and small amounts of rain. Spring occurs after winter rains have revived the vegetation. Topographical variation creates local modifications of the basic climatic pattern.

Table 33. Annual temperatures °C.

<u>REGION</u>	<u>WINTER</u>	<u>SUMMER</u>	<u>EXTREMES</u>
	MIN MAX	MIN MAX	MIN MAX
Coast	10° 21°	18° 32°	2°40°
Lebanon Mountains	-8° 15°	7° 26°	-12° 38°
Bekaa Valley	-7° 18°	7° 37°	-11° 44°
Anti-Lebanon Mountains	-15° 7°	4° 24°	-20° 32°

(2) Along the coast summers are hot and humid with little or no rain. Heavy dew provides moisture which is beneficial to agriculture. A westerly on-shore breeze provides relief during the afternoon and evening. At night the wind direction is reversed, blowing from the land out to sea.

The temperatures are cooler along the northern parts of the coast where there is more precipitation. Rainfall is abundant during winter, much of which occurs from heavy cloudbursts during a few days of the rainy season. The average annual rainfall is 102 cm, although it varies from year to year. Frosts and bitter cold winds from Europe may occur occasionally during the winter. A hot wind, called the "khamain," from the Egyptian deserts to the south of Lebanon provides an occasional warming trend during the fall and again in the spring.

(3) In the Lebanon Mountains, the gradual increase in altitude produces a colder winter with more precipitation generally in the form of snow. Frosts are frequent and snows are heavy. Snow covers the highest peaks during much of the year. Both the khamain and the northern winter wind are felt in the Lebanon Mountains. Summer has a wider daily range of temperature with less humidity. Visitors to the coastal cities, as well as the inhabitants there, seek refuge from the oppressive coastal humidity by spending much of the summer at numerous mountain resorts.

(4) Both the Bekaa Valley and the Anti-Lebanon Mountains are shielded from the influence of the sea by the Lebanon Mountains. The result is considerably less precipitation and humidity and a wider variation in temperatures, both daily and annually. Because of the altitude, the Anti-Lebanon Mountains receive more

precipitation, as much as 51 cm, compared to the Bekaa Valley which receives only 38 cm. As a result, the peaks of the Anti-Lebanon Mountains, like those of the Lebanon Mountains, are snow-covered for much of the year. Even though the highest point is only 1,100 m, more snow falls in the Bekaa Valley, than at comparable altitudes west of the Lebanon Mountains.

b. Light tables. Light tables reflect the average times, by month, for sunrise and sunset ([Table 34](#)). At the beginning and ending of darkness, general outlines may be visible and the horizon may be barely perceptible.

Table 34. Light table.

<u>LATITUDE OF CAIRO</u>											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>SUNRISE</u>											
0643	0635	0607	0526	0450	0428	0431	0449	0511	0532	0557	0624
<u>SUNSET</u>											
1640	1708	1734	1758	1821	1843	1853	1839	1804	1723	1646	1629

5. Terrain. Lebanon is located on the eastern shore of the Mediterranean Sea and is approximately 10,400 km² in area. The winding 322-km boundary with Syria, which follows a rift in the north and a mountain crest in the east, is internationally recognized. The country is roughly rectangular in shape, becoming more narrow in the south. The widest point is 88 km, decreasing to 32 km to create an average width of 60 km. The Lebanese landmass consists of 64% desert and urban areas, 27% agricultural, and 9% forest ([Figure 2-25](#)).

a. Terrain features. There are four geographical regions in Lebanon: the coastal plain, the coastal mountain range, the central plateau or valley, and the interior mountain range. Despite the small size of the country, these regions are individually characterized by differences in climate, soil and minerals, water supply, fauna and flora, settlement density, and to a certain extent, religious communities and ethnicity.

(1) The coastal plain is narrow and broken in places where the mountains slope directly to the sea. Because of the close proximity to the sea and international communications, the coastal plain is the site of Lebanon's principal cities. The coastal plain has a few good natural harbors and many shallow, curved bays. Streams and wadis flow east to west throughout the area. Water is plentiful, although much of it is polluted, especially in the more densely populated areas. The area is extensively cultivated.

(2) The coastal mountain range, consisting of the Lebanon Mountains, rises rather sharply from the coastal plain with few transitional foothills. This coastal range is separated from the Jabal an Nusayriyah Range along the Syrian coast by a geological

rift, composed of the Akkar Plain near Tripoli and the Buqayah Plain near Homs in Syria. The range runs the entire length of the Mediterranean Coast, sloping downward from north to south, and merges with the hills of Galilee in Israel. The highest peak is Qarnat as Sawda (3,083 m) near Basharri, southeast of Tripoli. East of Beirut are several mountain peaks; the highest of these is Jabal Sannin at 2,608 m. The Lebanon Mountains and the coastal plain are formed by an upfold, complicated by numerous small faults, and bounded on the east by a sharp fault that forms the western boundary of the Bekaa Valley. Cultivation on the western side of the mountains is possible up to the 1,500-m level because of the numerous springs which exist.

(3) East of the Lebanon Mountains lies the central plateau or valley which includes the Bekaa Valley. From a watershed height of 1,187 m above sea level near Baalbak, the plateau decreases in elevation to the north and to the south. In the south, it is separated from the Jordan Valley by a range of hills and a southwestern extension of the interior range. In the north the plateau opens into the Syrian Plain at Homs. The Bekaa Valley is about 120 km long and varies from 8 to 13 km in width. The floor of the Bekaa Valley averages 914 m above sea level. Two rivers originate in the Bekaa; the Nahr al Asi, which flows northward to Syria, and the Nahr al Litani, which flows southward.

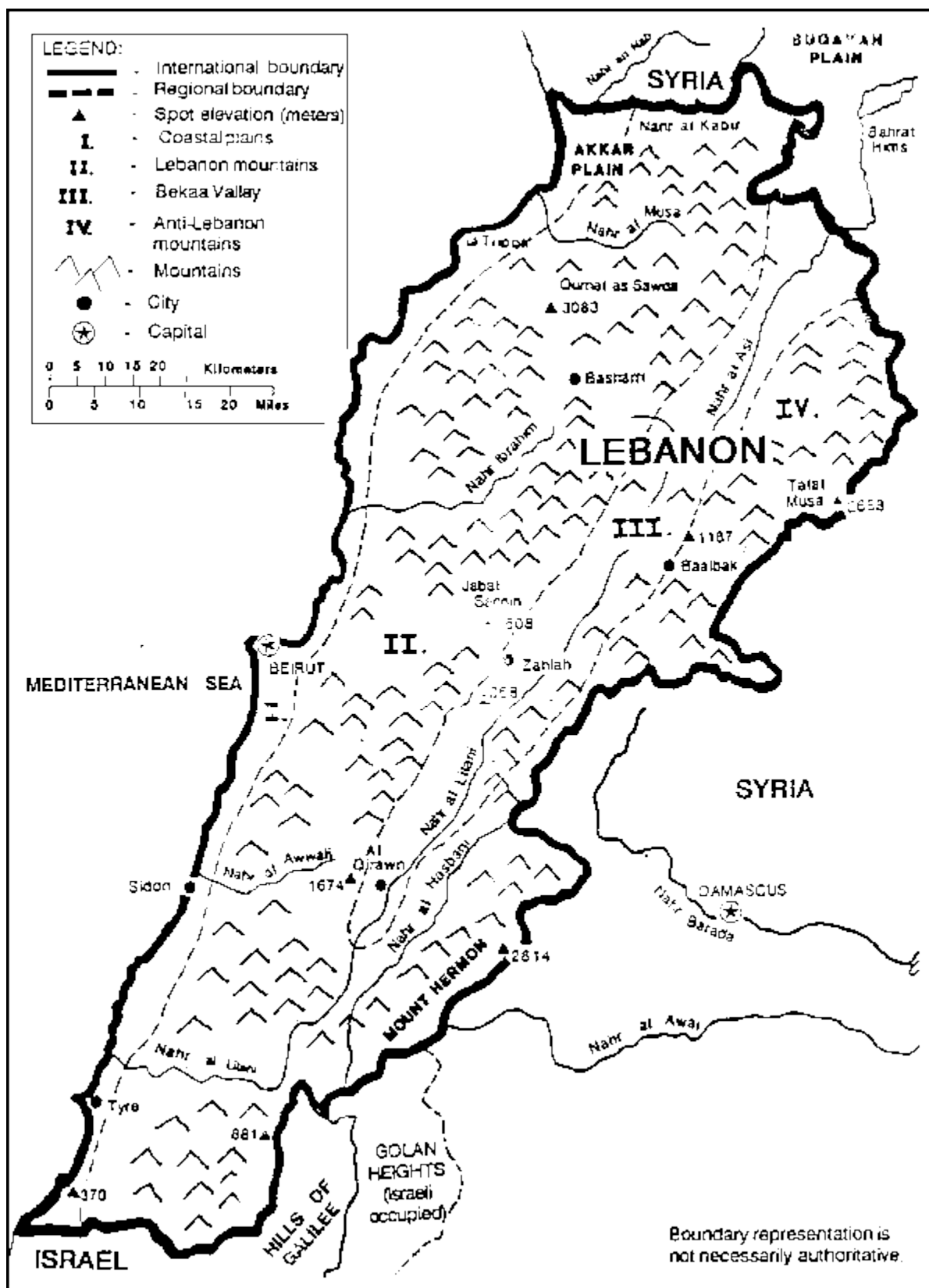


Figure 2-25. Terrain features and natural regions of Lebanon.

(4) To the east of the Bekaa Valley is the interior mountain range which consists of the Anti-Lebanon Mountains (Jabal ash Sharqi) and their southern extension, Mount

Hermon (Jabal ash Shaikh). Both form the Lebanese eastern boundary with Syria. Mount Hermon rises to 2,760 m, and in the northern sector, Talat Musa rises to 2,658 m. The interior mountain range is formed, like the coastal range, by a simple upfold. In the north the range merges into the Syrian Plain, and in the south it is terminated by the Jordan Valley Rift. The entire region is subject to earthquakes produced by movement along local fault lines. Trafficability in each of the regions is evaluated in [Table 35](#).

Table 35. Trafficability.

REGION	TRACKED VEHICLES	WHEELED VEHICLES	REMARKS
Coastal Plain	Fair to good movement and maneuver. This area is compartmented by mountain spurs which extend to the sea and is broken by rivers and cultivated areas. Large scale movements will be hampered except on the existing road system.	Good on existing road system; fair cross-country movement.	Entire area is overlooked by the Lebanon Mountains.
Coastal Mountain Range	North-south movement possible in foothills. Vehicles may be restricted to areas on or adjacent to the road system in higher elevations. East-west movement only through passes.	Poor except on existing road system.	See FM 90-6 , Mountain Operations.
Central Plateau	Excellent cross-country movement; provides access to the northwest portion of Syria.	Good both cross-country and on existing road system.	
Interior Mountain	Same as for a coastal mountain range.	Same as for coastal mountain range.	See FM 90-6 , Mountain Operations.

b. Urban areas. Beirut is the capital and largest city in Lebanon. The 1980 population was estimated at 1.3 million or roughly half of the population of the country. The city is situated on a partially elevated area of land jutting into the Mediterranean. Because of continued hostilities,

there has been extensive damage to the structures within Beirut and an almost constant shifting of the city's inhabitants. By 1990 more than one million people had fled the city. The other population centers are Tripoli, Zahlah, Sidon, and Tyre.

c. Coasts and beaches. Lebanon has 255 km of coastline and makes no specific claims as to territorial waters except for a 6 nm limit for fishing rights. Coast and beach access to Lebanon is evaluated at [Table 36](#).

Table 36. Coast and beach access.

<u>AREA</u>	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
Entire Coastline	Narrow beaches and dominating mountains inland would make amphibious operations on the Lebanese coast difficult. The more open areas near Tyre and Tripoli and south of Beirut provide more room for deployment. The Tyre and Tripoli areas are near passes through the Lebanon Mountains.	Dominating mountains and limited area for deployment make establishment of air superiority and suppression of hostile artillery critical factors in any amphibious operations.

6. LOCs.

a. Roads. Roads are much more essential to the movement of people and goods within the country than are rail and air transport. Most parts of Lebanon are connected by good but narrow roads. Primary highways connect the major cities and towns ([Table 37](#) and [Figure 2-26](#)). Secondary roads in Lebanon connect the mountain villages with the main highways. Many of the mountain roads have steep grades and sharp curves but are generally well maintained. Due to Lebanon's small size, all areas are accessible in one day's drive.

b. Railroads. The Lebanese rail system is government-owned and is in generally poor condition with antiquated rolling stock. All lines are single track and the system is almost entirely inoperative. [Table 38](#) identifies the gauge and rolling stock of the rail system. [Table 39](#) identifies the main routes and [Figure 2-26](#) depicts rail line locations.

c. Ports. Lebanon's major ports are Beirut, Tripoli, and Sidon. Five minor ports are located at Juniyah, Shikka, Az Zahrani, Jubayl, and Tyre. Northern ports are occupied by Syrian forces and southern ports are occupied or partially quarantied by the Israelis. [Table 40](#) lists the ports and their capabilities. [Figure 2-27](#) depicts the port locations.

d. Air transportation. Lebanon has two airlines--the Middle East Airlines (Air Liban) and the Trans-Mediterranean Airway (TMA). Air Liban handles passenger service, and the TMA handles worldwide cargo services. Both airlines are headquarters at the international airport south of Beirut in Khaldan. Beirut International, the primary airport, is utilized by both civilians

and military. As of 1991 none of the airports were under direct control of the Lebanese government. The air network is identified in [Table 41](#). Airfields are identified in [Table 42](#) and shown in [Figure 2-27](#).

e. Water transportation. Lebanon has no navigable rivers or streams.

Table 37. Roadways.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Tripoli-Beirut-Tyre	163 km	Principal route
Beirut-Tyre-Haifa (Israel)	135 km	None
Beirut-Tripoli-Tartus (Syria)	131 km	None
Beirut-Tripoli-Homs (Syria)	169 km	7% road grade from the border to Homs
Beirut-Zahlah-Baalbak-Homs	180 km	None
Beirut-Shtawrah-Damascus (Syria)	89 km	Principal route; reaches elevation of 1,372 j; portions impassable during winter.
Tyre-Bint Jabayl	33 km	None
Marjiyun-Shtawrah-Zahlah	72 km	None
Marjiyun-Jazzin-Sidon	58 km	7% road grade from An Nabatiyah to Marjiyun.
Baalbak-Tripoli	79 km	7% road grade

Table 38. Railroad network.

Rail Headquarters	Office of State Railroads, Transportation, and Communications Beirut, Lebanon
Total Track:	378 km
Standard Gauge:	1.435 m
Track:	296 km
Narrow Gauge:	1.05 m
Track:	82 km
Motive Power:	6 diesel locomotives 32 steam locomotives
Rolling Stock:	15 passenger coaches 900 freight cars

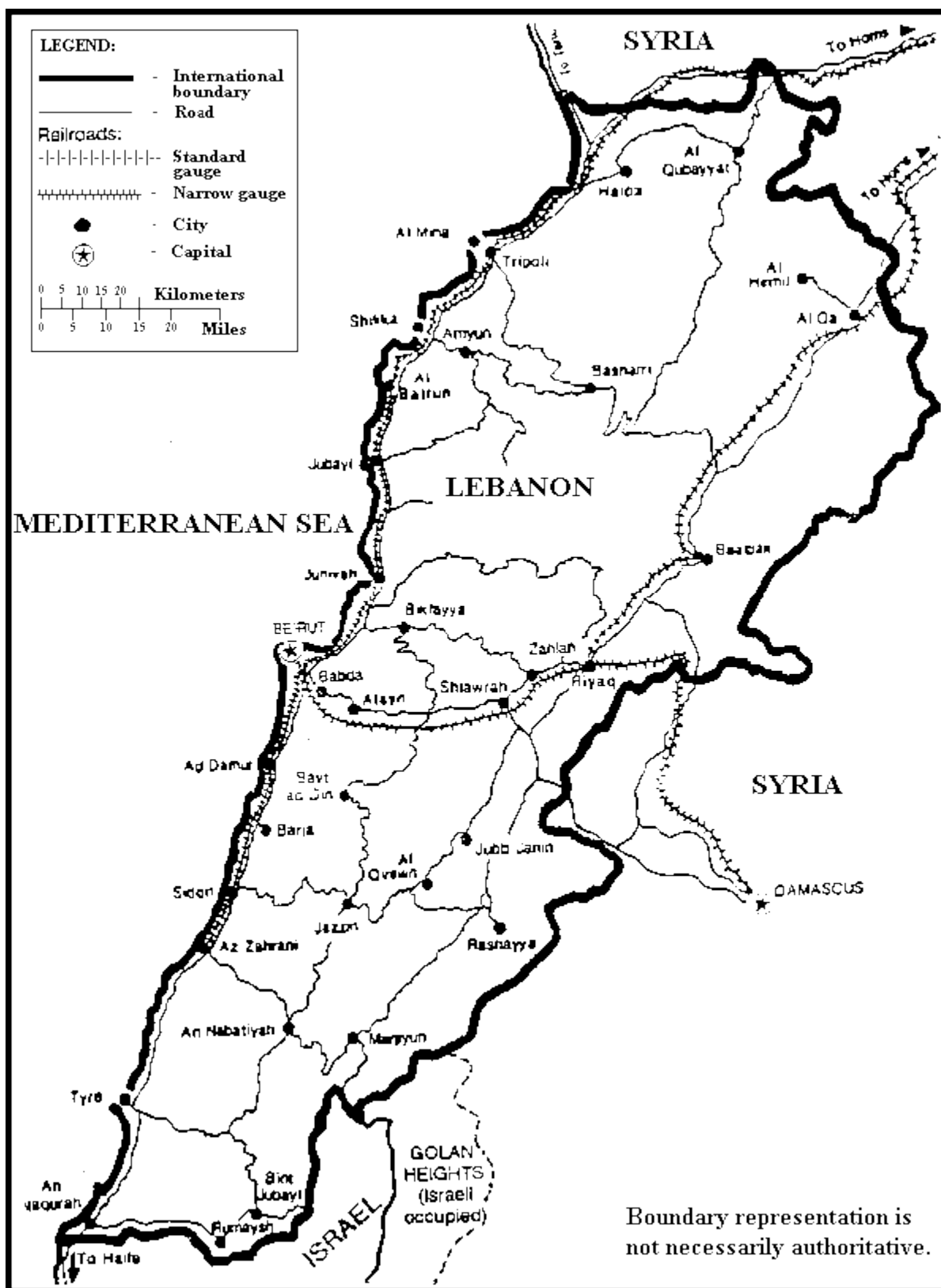


Figure 2-26. Roads and railroads of Lebanon.

Table 39. Railway routes.

<u>MAIN ROUTES</u>	<u>GAUGE</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Beirut-Sidon-Az Zahrani	Standard	41 km	None
Beirut-Tripoli-Homs (Syria)	Standard	172 km	52 km of track in Syria
Riyah-Homs (Syria)	Standard	108 km	45 km of track in Syria
Beirut-Riyah-Damascus (Syria)	Narrow	117 km	35 km of track in Syria

Table 40. Ports.

<u>PORTS</u>	<u>TYPE AND CAPABILITIES</u>
Beirut	Lebanon's largest and primary port; 4 docks with 13 quays; cranes; roll-on/roll-off and container facilities; full provisioning.*
Tripoli	Iraq Petroleum Company northern oil pipeline terminus (non-operational) 1 quay; cargo off-load by barges; provisioning available.
Sidon	Oil terminal; 1 pier; shallow draft (2 m); outside anchorage; cargo off-load by barges.
Junyah	Minor ports; 3 docks; also a naval facility; provisioning available.
Shikka	Privately owned port complex under construction; expected to have 8 quays.

Az Zahrani Terminal	Trans-Arabian Pipeline oil terminal; 4 berths; provisioning available; no fresh water.
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Jubayl and Minor ports; shallow draft boats only.

Tyre

*Includes fuel, fresh water, and food.

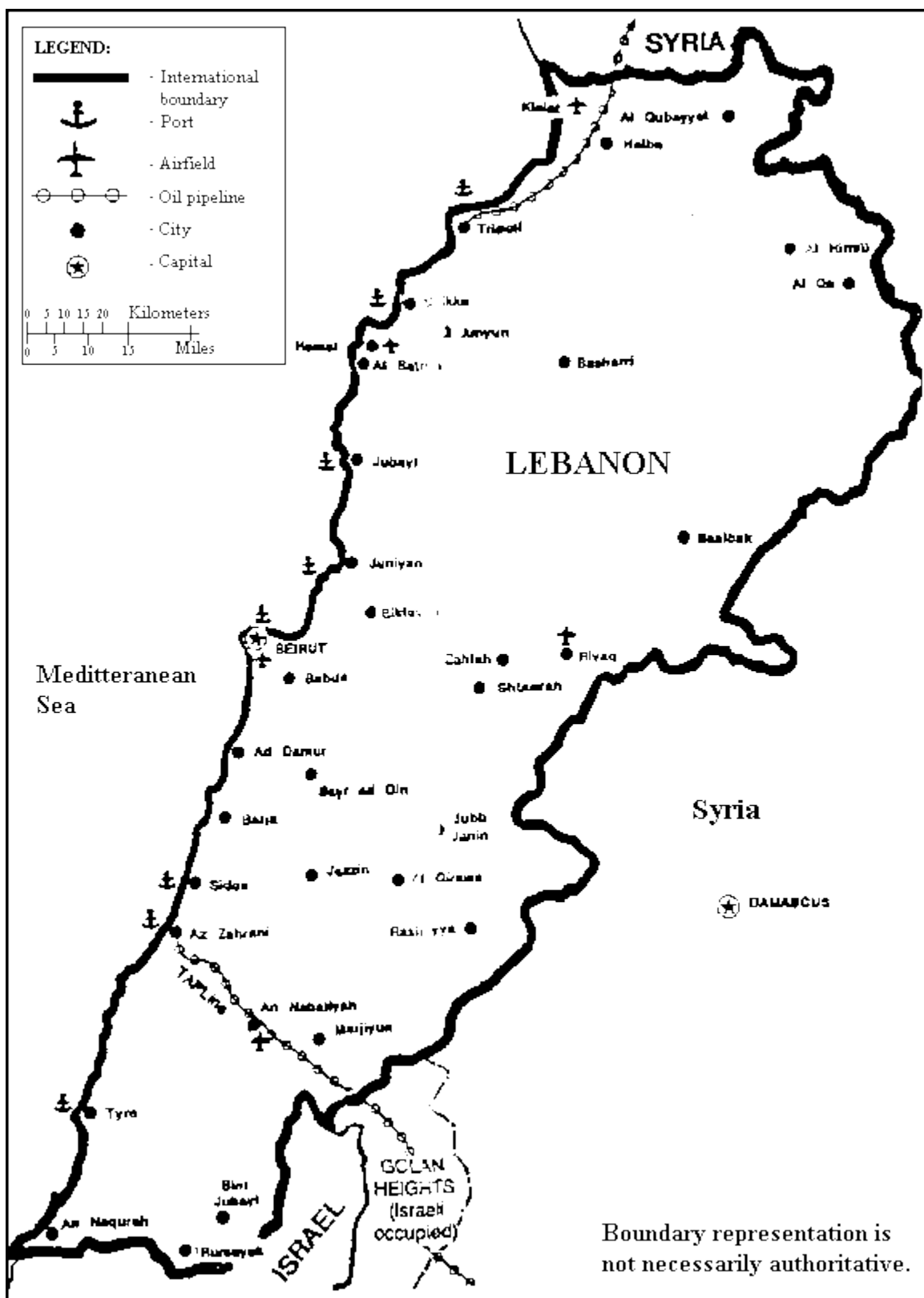


Figure 2-27. Ports, airfields, and pipelines of Lebanon.

Table 41. Air transportation network.

<u>AIRFIELDS</u>	<u>9 (8 USABLE)</u>
Runway Type	6
Permanent surface	
Unpaved fields and usable airstrips	2
Unusable airstrips	1
Runway Length*	
2,440-3,659 m	3
1,220-2,439 m	2
*Runway lengths are for paved and unpaved usable airfields only.	

Table 42. Airfields.

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
An Nabatiyah	A formerly government controlled field at An Nabatiyah; one 1,315 m sand runway; sited on a hilly plain; using traffic unknown.
Beirut International	Major civil aviation terminal 5 km south of Beirut in Khaldan; one 3,241 m and one 3,180 m asphalt runway; sited on a coastal plain.
Kleiat	Lebanese military facility; 20 km NE of Tripoli; one 2,987 m concrete runway; sited on a coastal plain; used by Lebanese Air Force.
Riyahq	Military facility in Bekaa Valley at Riyahq; no unclassified

information available.

Wajah al Hajar	Also known as Hamat; no unclassified information available.
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* None are under the direct control of the Lebanese Government (July 1991).

f. Pipelines. Lebanon's pipeline system consists of 72 km of international pipelines none of which are operational. The pipelines are identified in [Table 43](#) and located on the map at [Figure 2-27](#).

Table 43. Pipelines.

<u>MAJOR PIPELINES</u>	<u>DESCRIPTION</u>
Iraq Petroleum Company (IPC) pipeline	Extends from Tripoli NE to the Kirkuk oil fields in Iraq; suspended operations to Lebanon.
TAPLine	Runs from the Az Zahrani Terminal SE to the oil fields of Saudi Arabia and Bahrain;suspended operations to Lebanon.

7. Military capabilities.

a. Background. The Lebanese Armed Forces were created from the French Mandate Forces in 1945. The military establishment has generally remained under a Western influence and has traditionally acquired most of its equipment from the West. In respecting the delicate Christian-Muslim balance of the country, the military has unsuccessfully attempted to remain aloof from politics. The Army has been used to represent a national symbol committed primarily to preserving the independence and national unity of the country.

b. Organization and command structure. The 1926 Constitution designated the president of the republic as commander in chief of the armed forces, but it contained no other reference to the military establishment. On 13 March 1979, the Chamber of Deputies passed the New Defense Law, which reorganized the command structure of the armed forces. The law created the Supreme Defense Council, consisting of the President of the Republic as Chairman, the Prime Minister as Vice Chairman, and the Deputy Prime Minister and the Ministers of Defense, Foreign Affairs, Interior, and Finance as members. The Commander of the Armed Forces attended Supreme Defense Council meetings in an advisory capacity. The Supreme Defense Council had a secretariat, whose secretary general was required to be an active officer of the rank of colonel or above and who reported to the Prime Minister. There is no other detailed information available concerning the command structure.

c. National Armed Forces.

(1) The primary mission of the Armed Forces was to maintain internal security throughout the country. This was of paramount importance due to Lebanon's unusual political sectarian balance. Because of its limited resources and small size, Lebanon was unable to defend itself against foreign aggression. In addition to the military forces of the Lebanese Government, there are other military organizations representing the various political and religious factions in the country.

(2) The National Armed Forces were composed of conscripts and volunteers. The volunteers average ages were high since over 70% remained in service until retirement. The majority of the officers were commissioned from the Lebanese Military Academy. Christians comprised more than half of the officer corps, while Muslims constituted 60% and Christians 40% of the enlisted ranks. The Armed Forces received an appreciable amount of foreign training assistance during the 1970s and 1980s. Training included basic and advanced individual training and unit training up through battalion level.

d. Army. The Army was comprised of some 23,000 troops nominally assigned to 10 x brigades. However, loyalties and control of the brigades were split along sectarian lines. The government could only claim control of 4 x brigades and these brigades split their loyalty between two Christian leaders. The others were loyal to Sunni Shiite, Druze, Israeli or Syrian leaders/factions. This was a key factor in the government's inability to gain control over the warring factions in the Civil War.

e. Air Force. The Lebanese Air Force had about 800 (mainly Christian) personnel. The Air Force has presently only one operational base at Juniye-Jubayl highway. Numerous aircraft were destroyed in 1989-90; operational status of the remainder is doubtful.

f. Navy. Most units were reported captured and bases were destroyed. The remainder was damaged and are probably non-operational.

g. Paramilitary. Paramilitary forces include the internal security force (Ministry of Interior) with 8,000 policemen. This force is largely ineffective. Additionally, there are some customs personnel operating 2 x inshore patrol craft.

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h. Christian militia. The Christian militias numbered approximately 40,000 for defense of Christian areas, but like the Lebanese Army brigades they split their loyalties among three leaders. Largest of these militias was the Lebanese Forces (LF) (not government forces), who had an estimated 5,000 active and 30-35,000 reserves. The LF was equipped with tanks, APCs and artillery and was organized along conventional army lines. However, LF has been fragmented by numerous fractional disputes. The Army of Southern Lebanon (ASL) numbered approximately 3,000 and like the LF was equipped with tanks, APCs, and artillery. The ASL was created by the Israelis as an Israeli surrogate force in southern Lebanon. Many members of ASL had reputations as thugs and ASL militias were responsible for the massacres in the Sabra and Shatila refugee camps in the 1982 Israeli invasion of Lebanon.

i. Muslim militia.

(1) AMAL (Hope). The Shia (Shiite) community in Lebanon has been split into two basic functions. The AMAL Movement has been supported by Syria and their militia was known by the Arabian acronym AMAL (Lebanese Resistance Detachments). The AMAL had an estimated active force of 4,000 - 5,000 militia with another 3,000 - 4,000 reserves. If necessary, AMAL could probably have fielded 25,000 - 30,000 militia. Since Nabih Berri's election as leader of AMAL in 1980, Syria's influence over the organization began to increase. With increased Syrian support the AMAL militias were able to gain control over Shia sections of Beirut and southern Lebanon. One of the Lebanese Army brigades was loyal to Berri and supported AMAL actions.

(2) Hizbollah (Party of God). Shia leaders dissatisfied with the moderate policies of AMAL along with pro-Iranian leaders formed a loose coalition that became known as Hizbollah. These radicals favored establishment of an Islamic Republic of Lebanon modeled after Iran's. Muhammed Gadrallah was the spiritual leader of Hizbollah, but the real leader was the Ayatollah Khomeini. Hizbollah has been controlled by Iran and has been concentrated in southern Lebanon, where they came into conflict with AMAL forces. Hizbollah had an estimated active force of 3,000 - 4,000 militia and was the group responsible for kidnapping most of the Western hostages.

j. Druze militia. The military arm of Walid Jumblat's Progressive Socialist Party (PSP) was the Druze militia. This militia had an estimated 25,000 personnel to include 3,000 active troops. They were armed with Syrian tanks and heavy artillery. Christian leaders allege that the Druze also received arms and support from Israel in 1983 in an Israeli attempt to stabilize the fighting in the mountains. Jumblat, who is closely aligned with Syria, heads the National Movement, a loose coalition of leftist and Muslim political parties and militias. The Druze are a secretive, breakaway Islamic sect representing about 10% of Lebanon's population and are largely concentrated in villages of the Shouf Mountains. Under the terms of the National Pact of 1943, which determines the political organization of the country, the Druze are denied the top three positions in the government.

k. South Lebanese Army (SLA). The SLA has approximately 2,500 active troops, mainly Christian, some Shi'a and Druze, trained, equipped and supported by Israel. The SLA occupies the security zone between Israel and the area controlled by the UN Interim Force in Lebanon (UNIFIL).

l. Foreign forces. Known foreign military forces in Lebanon consist of Syrian, PLO, Israeli, Libyan, and Iranian elements and the UN Peacekeeping Force.

(1) Syrians. Syrian troops entered Lebanon in 1976 as the main contingent of the Arab League's "Arab Deterrent Forces" to end Lebanon's civil war. 42,000 Syrian troops are still in Beirut, the Bekaa Valley of eastern Lebanon and in northern Lebanon. The Syrians were believed to have provided logistical and artillery support to the Druze militia. They have also aided PLO rebels against loyalist PLO troops. Syrian forces have the following units in the areas shown:

- (a) Beirut - Elements of 1 x mechanized infantry brigade and 5 x SF regiments.
- (b) Metn - Elements of 2 x mechanized infantry brigades and 1 x armored brigade.
- (c) Bekaa - Corps HQ, 1 x infantry brigade, elements of 1 x mechanized infantry brigade, and 1 x SF regiment.
- (d) Tripoli - 2 x SF regiments and elements of Palestine Liberation Army (PLA) troops.

(2) Iranians. There are some 2,000 Iranian Revolutionary Guards in the Baalbak area of Lebanon to include locally recruited Shi'a Lebanese.

(3) UN Peacekeeping Force. UN Interim Force in Lebanon (UNIFIL) is a multinational force that was introduced into southern Lebanon in 1978 to enforce a cease-fire. UNIFIL has 5,500 troops in an area south of the Nahr al Litani which is entirely within the Israeli zone of occupation. Troop contingents are from France, Fiji, Finland, Ghana, Ireland, Italy, Norway, Nepal, and Sweden.

(4) Israeli. There is an Israeli force of undetermined strength in the buffer zone bordering Israel.

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(5) PLO. An unknown number of PLO troops are believed located in the Bekaa Valley of eastern Lebanon. The remainder of the PLO's forces were evacuated from Beirut in September 1982 to countries as far away as Algeria and Tunisia, but have been reinfiltrating into Beirut. Since the spring of 1983, Syrian-backed PLO rebels have taken a number of bases in the southern Bekaa from forces loyal to PLO Chairman Yasir Arafat. The number of rebels is uncertain, but they are believed to have aided the Druze militia in the 1984 fighting. All significant factions of the PLO and other Palestine military groups are listed below irrespective of the country in which they are based. Strength are estimates of the number of active "fighters."

- (a) Fatah. There are approximately 4,500 "fighters."
- (b) Palestine Liberation Front (PLF) (AKA: Front for Liberation of Palestine). The PLF has approximately 300 "fighters." Faction leader is Abu Al-Abas.
- (c) Fatah Dissidents (AKA: Abu Musa Group). There are approximately 1,000 "fighters." Faction leader is Abu Musa (Said Muragha).
- (d) Popular Front for Liberation of Palestine (PFLP). The PFLP has approximately 900 "fighters." Faction leader is Dr. George Habash.
- (e) Popular Front for Liberation of Palestine, General Command (PFLP(GC)). This faction has approximately 500 "fighters." Faction leader is Ahmed Jibril.

(f) AS SAIQA. This faction has approximately 600 "fighters." Faction leader is Issam al-Khadi.

(g) Popular Struggle Front (PSF). This faction has approximately 500 "fighters." Faction leader is Dr. Samir Ghawshad (Ghush).

(h) Democratic Front for Liberation of Palestine (DFLP). This faction has approximately 1,000 "fighters." Faction leader is Nayaf Hawatmah.

(i) Fatah Revolutionary Council (FRC) (AKA: Abu Nidal Organization, Black June Organization). The FRC has approximately 500 "Fighters." Faction leader is Abu Nidal.

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PART E: OMAN

1. General information. Oman (oh MAN) is a small country on the southeastern tip of the Arabian Peninsula and is about as big as the state of Kansas. Oman is one of the hottest countries in the world with temperatures that sometimes reach 54°C. Muscat is the capital and largest city. [Figure 2-29](#) is a country outline of Oman.

2. Statistical Data.

Name:	Sultanate of Oman
Capitol:	Muscat
Population:	2,264,590 (July 1997)
Area:	About 212,460 km ²
Ethnic divisions:	90.6% Arab, 9.4% Iranians, Baluchis, Indians, and others
Language:	Arabic (official language), Farsi, English, Baluchi, Urdu, and Indian
Literacy rate:	80%
Religion:	Islam (primarily Ibadhi and Sunni sects, minor Shiite representation)
GNP:	\$8.5 billion
Per capita income:	\$6,400
Unit of currency:	Omani rial (OR)
Exchange rate:	\$1 = .3845 OR
Time zone:	Four hours ahead of UTC; nine hours ahead of US Eastern Standard Time; time zone DELTA

Defense forces: Army, Air Force, Navy, paramilitary forces, and Royal Household

Flag ([Figure 2-28](#)):

STATE ARMS
IN WHITE



WHITE

RED

GREEN

Figure 2-28. Flag of Oman.

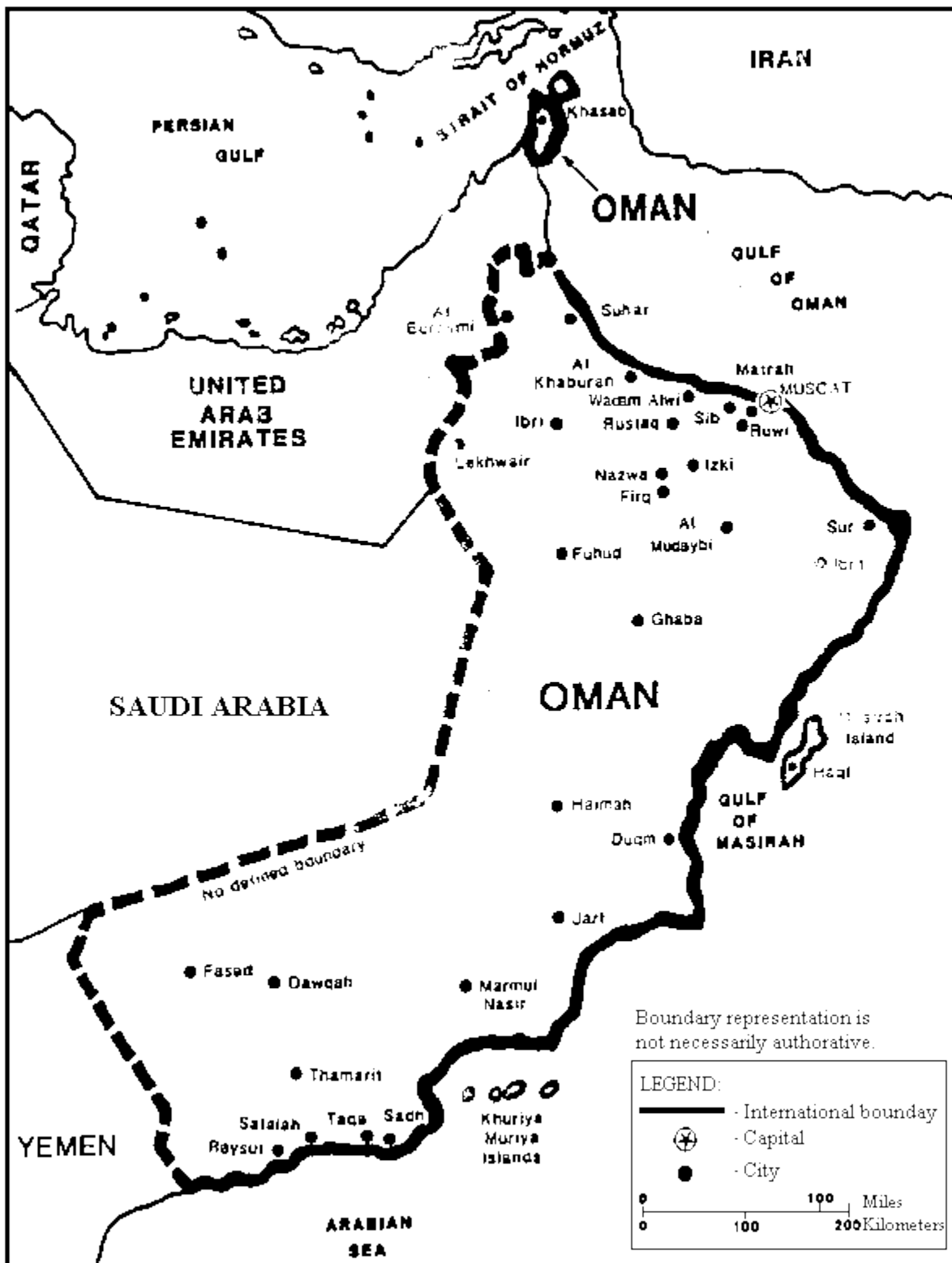


Figure 2-29. Oman.

3. History.

a. Historical background.

(1) Throughout history Oman has differed from the other states of the Persian Gulf in religion, tribal origins, and its approach to world affairs. Although subject to past invasions by several external powers, Oman has generally maintained its independence. Oman was a substantial maritime power until 1507 when Portugal seized control of the Oman coastline. With the Omani expulsion of the Portuguese in 1650, the country regained its independence and has been the longest continuously independent Arab state in modern times. After independence in 1650, Oman began an expansion program which added portions of the East African coast, Zanzibar, and part of present day Iran to its borders. By early 19th century Oman was the most powerful Arab state in Southwest Asia.

(2) As the undisputed leader of Arabian Sea trade, Oman also extended trade domination into the Persian Gulf. At the beginning of the 20th century, due to economic problems and European competition, Omani trade declined. In 1938 Sultan Taimar abdicated in favor of his son, Said bin Taimur. Sultan Said slowed the country's modernization and discouraged trade in an effort to isolate Oman from outside influence. In 1970 the sultan's son, Qaboos, deposed his father and began leading the country once again toward modernization.

(3) The most important long-term development contributing to the stability of Oman has been the establishment of a special relationship with Great Britain. Treaties of friendship that were negotiated in 1798 and 1800 still remain strong today. While formal relations have rested on these treaties of friendship, commerce, and navigation which were signed in 1891, 1939, and 1951, British military presence and assistance have never been based solely on such obligations. Even during periods when no treaties were in force, Great Britain has periodically maintained regular British military units, naval bases, and air stations in Oman.

b. Recent history.

(1) At the time of Sultan Qaboo's assumption of power, Oman was a country plagued by disease, illiteracy, poverty, and an insurgency in the province of Dhofar. Since that time, Sultan Qaboos has launched a major social services development program and has begun an expansion of the country's resource base. Sultan Qaboos has also been successful in his efforts to curb insurgency by expanding and modernizing his armed forces and by granting amnesty to all surrendering rebels.

(2) During the past few years, Oman has improved relationships with its Arab neighbors and other countries of the world. The strategic importance of Oman has not gone unnoticed, and the US negotiated a defense alliance with Oman during the mid-1970s. During the recent operation Desert Storm, Oman sided with US and multi-national forces.

4. Weather.

a. Climate.

(1) The climate of Oman is characterized by arid areas and one subtropical region. Summer begins in mid-April and lasts until October ([Table 44](#)). The climatic divisions are similar to the terrain regions depicted in [Figure 2-30](#).

Table 44. Annual temperatures °C.

<u>REGION</u>	<u>WINTER</u>	<u>SUMMER</u>	<u>EXTREMES</u>
	MIN MAX	MIN MAX	MIN MAX
Musandam Peninsula	7° 21°	18° 32°	0° 38°
Batinah Plain/Muscat-sur Coast	11° 18°	26° 38°	5° 45°
Interior	0° 13°	18° 49°	-4° 54°
Dhofar Province	18° 25°	24° 30°	10° 44°
Masirah Island	18° 25°	25° 36°	15° 40°

(2) Because of the low elevation of the Batinah Plain, the humidity hovers around 90%. The "gharbi" (meaning western) is a strong wind that blows from the desert of the Rub al Khali (empty quarter), and is capable of raising temperatures in the towns along the Gulf of Oman by 7°C. Winter in the Batinah is mild and pleasant. Muscat experiences oppressive heat on summer nights, primarily due to the dark mountains which surround the town and radiate the heat they have absorbed during the day. The highest temperatures are registered in the interior.

(3) Dhofar Province has a monsoon climate resulting from cool winds blowing from the Indian Ocean. The monsoon comes between June and September. This is when the area receives most of its annual rainfall of 64 to 76 cm providing that province with constantly running streams. The monsoon activity also provides the province with lower summer temperatures than those found in the rest of the country.

(4) Precipitation along the coasts and on the plains in the middle and late winter, ranges from 3 to 13 cm a year. Rainfall in the mountains, particularly over the Jabal Akhdar, is much more significant and may reach 38 cm. Because the plateau of the Jabal Akhdar is porous limestone, rainfall quickly seeps through and allows for meager vegetation. A huge reservoir under the plateau feeds springs in low-lying areas. Additionally, an

enormous wadi channels water to the valleys, making the area agriculturally productive in years of good rainfall.

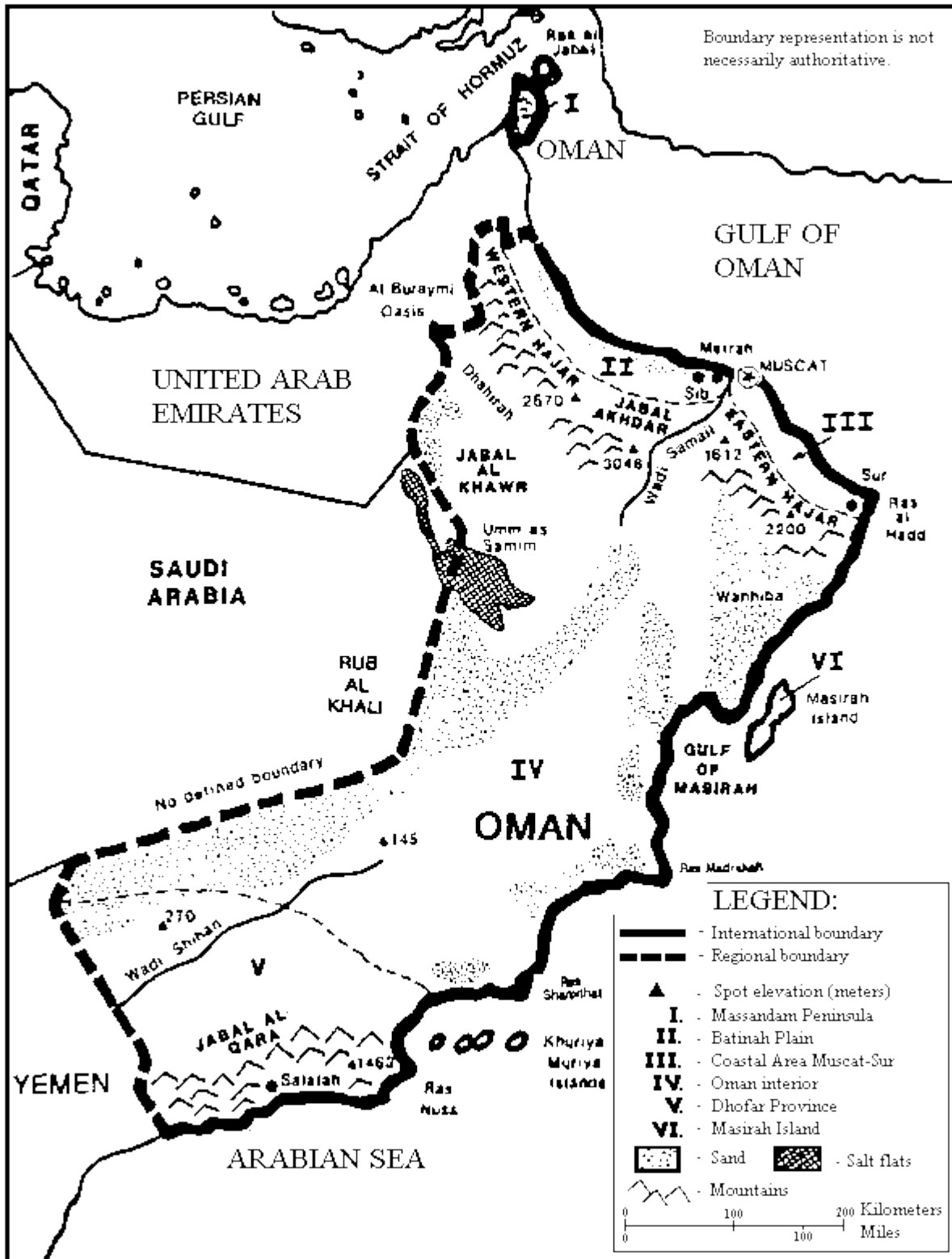


Figure 2-30. Terrain features and natural regions of Oman.

b. Light tables. Light tables reflect the average times, by month, for sunrise to sunset ([Table 45](#)). At the times shown, general outlines may be visible, but the horizon is not likely to be distinguishable.

Table 45. Light table.

<u>SIB, OMAN</u>												
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
<u>SUNRISE</u>												
0649	0648	0629	0600	0533	0520	0523	0536	0548	0558	0612	0632	
<u>SUNSET</u>												
1732	1753	1810	1822	1835	1849	1858	1850	1825	1755	1728	1720	

5. Terrain. Oman lies in the southeastern portion of the Arabian Peninsula. Because the country's boundaries remain unfixed, its exact size is unknown. Current estimates put Oman's landmass at approximately 212,460 km². Geography has made Oman a virtual island, bordered primarily by the sea and the desert of the Rub al Khali. Historically the country's contacts with the rest of the world have been by way of the sea. Oman is bordered by the UAE to the northwest, the Gulf of Oman to the north, the Arabian Sea to the south, and Yemen to the southwest. Oman's boundary with Saudi Arabia to the west is undefined and has been the subject of intermittent and occasionally violent disputes. Oman's territory includes the tip of the strategically important Musandam Peninsula, which juts into the Strait of Hormuz at the mouth of the Persian Gulf.

a. Terrain features. Natural features divide the country into several distinct areas: the Musandam Peninsula, the Batinah Plain, the Muscat-Sur coastal area, the Oman interior with its western foothills and desert fringes, the Dhofar Province area in the south, and the offshore island of Masirah ([Figure 2-30](#)).

(1) The northernmost area at the tip of the Musandam Peninsula is the Ras al Jabal, a narrow ridge of land which touches the Strait of Hormuz and is separated from the rest of Oman by a belt of territory belonging to several states of the UAE. This area consists entirely of low mountains forming the northernmost extremity of the western Hajar. Two inlets, Elphinstone and Malcolm, cleave the coastline about one third of the distance from the Strait of Hormuz. At one point these two inlets are separated by only a few hundred yards of land. The coastline is extremely rugged; and the Elphinstone Inlet, 16 km long and surrounded by cliffs 900 to 1,200 m high, has frequently been compared to the fjords of Norway.

(2) From the most northeastern portion of the border between the UAE and Oman to the town of Sib, 242 km to the southeast, runs a narrow, well-populated coastal plain known as the Batinah. Across the Batinah are a number of wadis that descend from the western Hajar to the south. The wadis are heavily populated along their upper courses. A ribbon of oases, watered by wells and underground channels, extends the length of the Batinah Plain about 1.6 km inland from the coast. Dates, limes, mangoes, and other fruits are grown in irrigated coastal gardens. Small quantities of cereal grains are also produced here. On the landward side of the Batinah Plain there are acacia trees, beyond which a barren, pebbly plain gradually rises to the foothills of the western Hajar 16 km away.

(3) South of Sib the coast changes character to become the Muscat-Sur coastal plain. For about 175 km from Sib to Ras al Hadd, the coastal plain is barren and bounded almost its entire length by cliffs. There is no cultivation and very little habitation in this area. Although the deep water off the coast renders navigation relatively easy, there are few natural harbors or safe anchorages. The two best harbors are at Muscat and Matrah; these natural harbors gave rise to the growth of cities centuries ago.

(4) West of the coastal areas is the tableland of central Oman. The Hajar Mountains form two ranges: the western Hajar (Hajar al Gharbi) and the eastern Hajar (Hajar al Sharqi). They are divided by the Wadi Samail, a valley that forms the traditional route between Muscat and the interior. The general elevation is about 1,220 m, but the peaks of the high ridge known as the Jabal Akhdar rise to 3,048 m above sea level in some places. Behind the western Hajar are two inland regions. Dhahirah and inner Oman, separated by the lateral range of Jabal al Khawr. Both regions become stony desert before meeting the Rub al Khali. Inland of the eastern Hajar is the sandy region of the Wahhiba, which also borders the desert. Low hills and wastelands meet the sea for many miles. Halfway along this coast and about 15 km offshore is the barren island of Masirah. It is 64 km long, and it was used for years by the British as a Royal Air Force (RAF) base, which has been expanded by the US and is presently the training base for the Omani Air Force.

(5) Dhofar Province extends from Ras Sharbithat on the coast to the border of Yemen. Its exact northern limit has never been defined, but the territory claimed by the sultan includes the Wadi Muqshin about 240 km inland. The southwestern portion of Dhofar's coastal plain is regarded as one of the most beautiful in Arabia. Salalah, the capital of Dhofar, served as the permanent residence of the former sultan and is the birthplace of Sultan Qaboos, the present ruler.

(6) The southwestern coastal plain contains splendid vegetation and birdlife, but 16 km inland the rugged foothills of the Jabal al Qara begin. The highest peaks of the Jabal al Qara are between 900 and 1,500 m but they gradually slope down to a narrow, pebbly desert adjoining the Rub al Khali in the north. Trafficability in Oman is evaluated at [Table 46](#).

b. Urban areas. About one third of the population of Oman lives in the capital city of Muscat and in the narrow Batinah coastal plain to its northwest. Muscat consists of a series of towns strung along the Gulf of Oman for about 30 km. Not far from Muscat is Oman's commercial center, Matrah, and the site of the country's major seaport, Mina Qaboos. Just beyond Matrah is the Ruwi Valley, where most of the government industries and commercial enterprises have been established due to the limited land area for building around Muscat and Matrah.

Table 46. Trafficability.

REGION	TRACKED VEHICLES	WHEELED VEHICLES	REMARKS
Musandam Peninsula	Poor except on roads and trails. The extremely rugged terrain will restrict tracked vehicles to established roads and trails with few exceptions in coastal areas.	Poor, same as tracked vehicles. Many areas are inaccessible except by sea or air.	
Batinah Plain	Excellent, with some restriction due to wadis which cross to the sea.	Excellent, same as for tracked vehicles.	
Muscat-Sur Coastal Area	Fair to poor, this barren rocky area is almost inaccessible except from the inland.	Poor	
Oman Interior	Fair to good mobility, few key areas except the central oil fields.	Rudimental road system. Cross country mobility will depend on local surface conditions.	See FM 90-3 , Desert Operations.
Dhofar Province	Good mobility in coastal areas, changing to fair to poor inland as the mountains become more rugged.	Same as tracked vehicles.	

Masirah Island	Limited mobility except for local operations.	Limited to road system.
----------------	---	-------------------------

c. Coasts and beaches. Oman claims 12 nautical mile (nm) as the limits of its territorial waters, except for an exclusive economic zone reserved for fishing that covers 200 nm. There are 2,092 km of coastline. Coast and beach access to Oman is evaluated in [Table 47](#).

Table 47. Coast and beach access.

<u>AREA</u>	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
Musandam Peninsula	This rocky coast is suitable only for small scale operations.	Strategically an exceptionally important area. Omani military installations are being developed in this area.
Batinah Coast	This entire region would be suitable for amphibious operations of any scale. Ample room for beachhead and deployment exists.	The strategic location of this region adjacent to the Gulf of Oman makes it a primary area of military interest.
Muscat-Sur Coastal Plain	High cliffs and little or no beach; poor amphibious potential.	None.
Southeast Coast	Long stretches of beach extending into the interior desert would be suitable for amphibious operations.	This area is extremely remote from key areas of the country and has little strategic significance.
Masirah Island	RAF/US facilities on this island make it attractive as a staging area. The small port is usable by amphibious forces.	Raysut is presently being developed for possible use by the US Navy.
Dhofar Coastline	This rocky coastline includes the mjoy port of Raysut and several minor ports which are usable by amphibious forces.	

6. LOCs.

- a. Roads. A network of 22,800 km of adequately graded and asphalt-surfaced roads link the main population centers. Most mountain villages are only accessible by four-wheel drive vehicles. The road type/length and main routes are listed in [Table 48](#). [Figure 2-31](#) depicts the Omani road network (1,590 km of asphalt was added to the road system during the 1981-1985 development plan).
- b. Railroads. Oman does not have a railroad system.

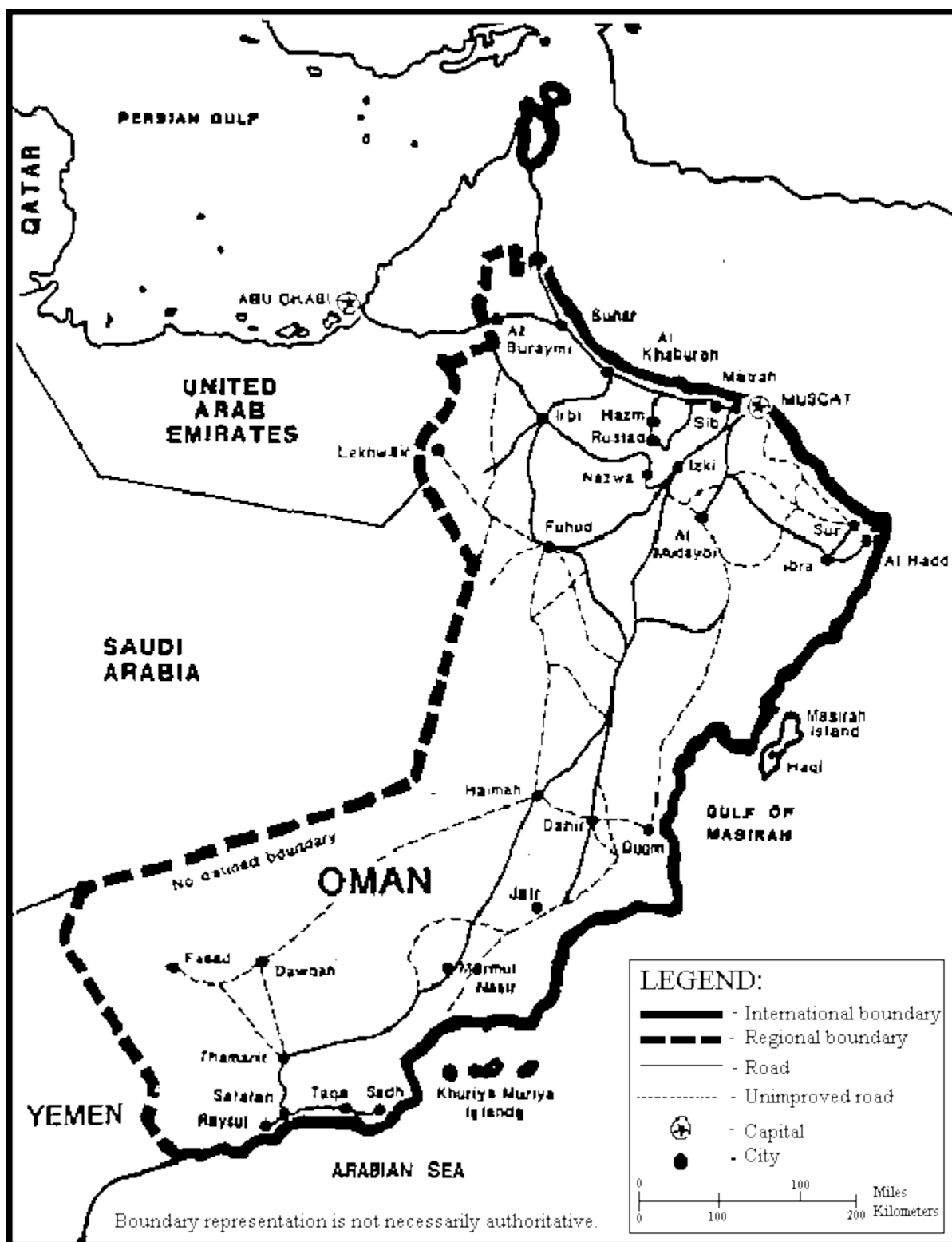


Figure 2-31. Road network of Oman.

Table 48. Roadways.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>
Muscat-Suhar-Abu Dhabi (UAE)	470 km
Muscat-Izki-Fuhud-Salalah	780 km
Muscat-Sur	290 km
Raysut-Salalah	20 km
Salalah-Thamarit	80 km

c. Ports. Oman has two major ports, Mina Qaboos and Mina Raysut, which are under the direct authority of the Port Service Corporation Ltd., headquartered in Muscat. There are two minor ports: Mina al Fahal, and Rijam. There are loading facilities for smaller craft at Suhar, Al Khaburah, Sur, Marbat, and Salalah. [Table 49](#) provides a list of Oman's principal ports and their capabilities. [Figure 2-32](#) identifies the port locations.

Table 49. Ports.

<u>PORTS</u>	<u>TYPE AND CAPABILITIES</u>
Mina Qaboos	Protected deep water harbor; 12 berths heavy lift cranes; roll-on/roll-off; limited provisioning*.
Mina al Fahal	Supertanker oil terminal; three buoy moorings; full provisioning, but limited fresh water available.
Raysut	All weather port; four deep water berths and two shallow; limited provisioning.
Rijam	Oil terminal; near Muscat.
*Includes fuel, fresh water, and food.	

d. Air transportation. Oman has two international airports at Sib and Salalah. Most towns of any size as well as the oil fields have aircraft landing facilities. [Figure 2-32](#) locates the airfields. Tables 50 and 51 depict the air network and major airfields. Oman has a small domestic airline, Oman Aviation Service, and jointly owns Gulf Air and Gulf Helicopters with the UAE, Qatar, and Bahrain.

e. Water transportation. Oman has no inland waterways or bodies of water.

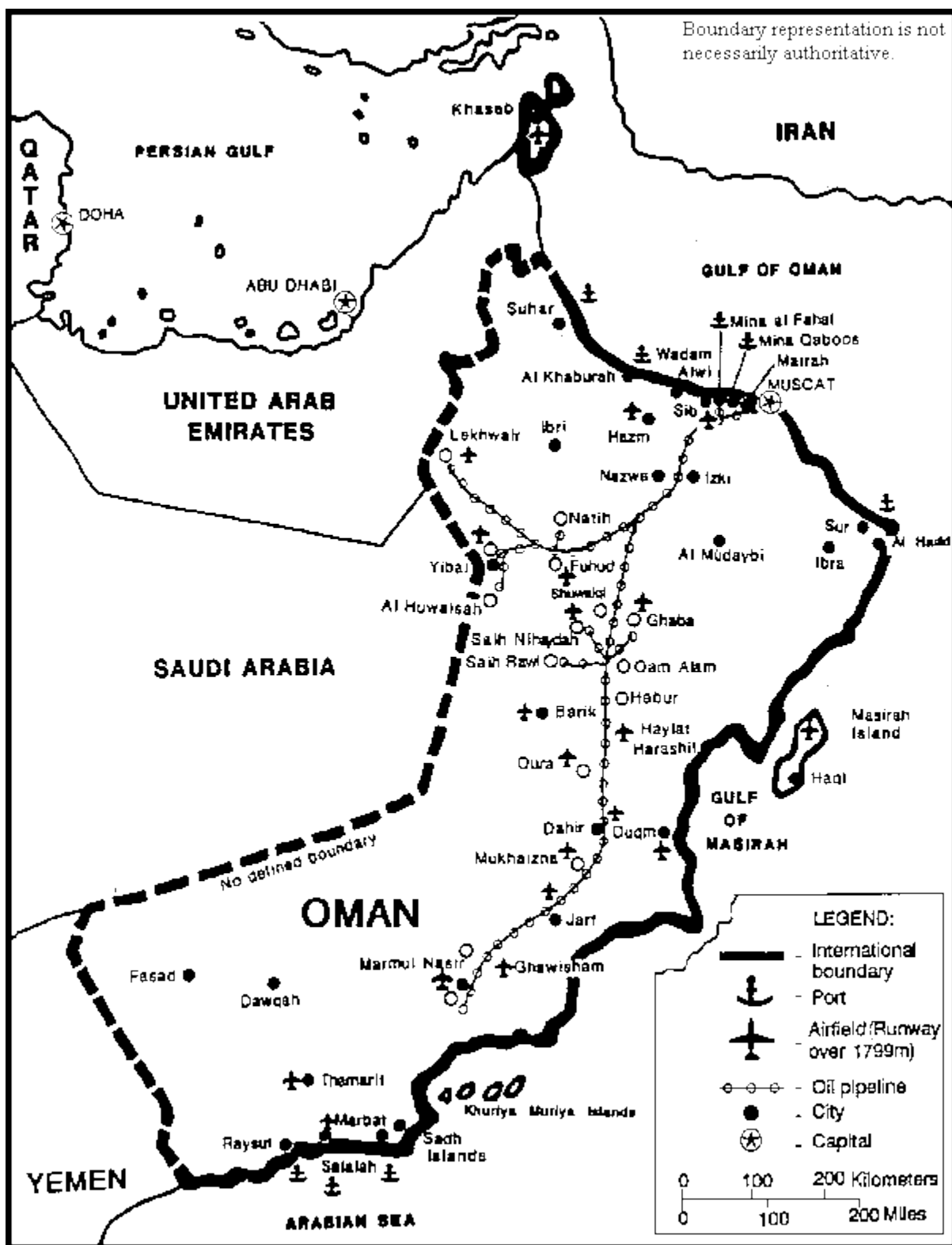


Figure 2-32. Ports, airfields, and pipelines of Oman.

Table 50. Air transportation network.

<u>AIRFIELDS</u>	<u>122 (114 USABLE)</u>
Runway Type	
Permanent surface	6
Unpaved fields and usable airstrips	114
Unusable airstrips	8
Runway Length*	
Over 3,660 m	1
2,400-3,659 m	8
1,220-2,439 m	64
Under 1,200 m	41
*Runway lengths are for paved and unpaved usable airfields only.	

Table 51. Airfields.

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
Al Hanw	Civil aviation field; 115 km N of Mazraq; 3,200 m and 1,425m sand runways; sited on a sand and gravel plain; used by oil company aircraft.
Barik	Civil aviation field; 361 km SW of Muscat; 2,000 m sand runway; sited on a sand and gravel plain; used to support an oil camp.
Dahir	Civil aviation field; 18 km NE of Dahir; 1,865 m gravel runway; sited on low sandy terrain; diversion field for domestic traffic on Masirah to Salalah route.
Duqm	Civil aviation field; 166 km SW of Masirah airfield; 2,000 m sand runways; sited in a dry wadi.

Fuhud	Civil aviation field; 272 km SW of Muscat; 1,900 m and 1,650 m sand runways; sited on a sand and gravel desert plain; used by oil company aircraft.
Ghaba	Abandoned civil aviation field; 184 km WNW of Masirah Island; 1,890 m and 1,400 m gravel runways in fair condition; sited in a sand and gravel desert.
Ghawisham	Abandoned civil aviation field; 237 km NNE of Salalah; 1,900 m graded earth runway in fair condition; sited on a level sandy desert.
Haylat Harashif	Government controlled field; 196 km W of Masirah Island; 1,900 m and 1,200 m sand runways; sited on a sandy plain.
Hazam No. 2	Sultanate of Oman Air Force field; 103 km W of Muscat; 2,600 m gravel runway, with only 1,800 m usable; sited on flat terrain.
Jarf North	Civil aviation field; 216 km NE of Salalah; 2,000 m graded earth runway on a desert plateau; used by oil company aircraft.
Khasab	Sultanate of Oman Air Force field; 51 km NE of Ras al Khaymah; 2,000 m asphalt and one 830 m graded earth runway; sited in a narrow valley in the north tip of Oman Peninsula; being improved by the US.
Lekhwair	Civil aviation field; 277 km S of Dubai; 1,800 m sand runway; sited on a bleak desert; supporting a nearby oil camp.
Marmul Nasir	Oil company field; 176 km N of Salalah; 2,000 m and 1,525 m gravel runways; sited on a level sand and gravel plain.
Masirah	Sultanate of Oman Air Force field on Masirah Island; 2,500 m asphalt and 2,225 m gravel runways; sited on the narrow northern tip of the island; military facility was upgraded by the US.

Mukhaizna North	Oil company field; 139 km W of Duqm; 1,800 m gravel runway; sited on a sand and gravel plain; used by oil company aircraft.
Qura	Oil company field; 94 km WNW of Dahir; 1,850 m sand runway; sited on a rock and sand desert; used to support an oil camp.
Salalah	Civil aviation terminal; 28 km N of Salalah; 2,725 m asphalt and 1,375 m graded earth runways; sited on a narrow coastal plain; Pan American Airways manages the facility under contract; two squadrons of Sultanate of Oman Air Force operate helicopters and fixed wing aircraft from this field.
Shuwaiqi	Oil company field; 268 km SW of Muscat; 2,135 m, 1,975 m, and 1,260 m gravel runways; sited on a gravel plain, used by oil company aircraft.
Thamarit	Sultanate of Oman Air Force field; 80 km N of Salalah; 4,000 m asphalt, 5,500 m, and 625 m sand runways; sited on a sand and rock plain with small hills to the south.
Yibal	Oil company field; 307 km SW of Muscat; 1,830 m sand runway; sited in featureless desert area; field services on adjacent oil camp.
*Runway lengths 1,800 m or longer.	

f. Pipelines. The pipeline system consists of 1,300 km for crude oil and 1,030 km for natural gas. The main crude oil pipeline runs from the oil fields in the Rub al Khali to the oil terminals at Mina al Fahal and has a capacity of 320,000 barrels a day. A branch line links the oil fields in Dhofar Province and the central region to the main line that runs from Fuhud to the coast ([Figure 2-32](#)). The natural gas pipeline follows the oil pipeline from the Yibal Field (west of Fuhud) to Muscat and Suhar.

7. Military capabilities.

a. Background. Since the late 18th century, Oman's close relationship with Great Britain has provided a certain measure of defense against belligerents. In 1963 the Dhofar Liberation Front (DLF), a guerrilla organization basically opposed to the sultan's rule and to the British connection, became a major problem for the Sultan's Armed Forces (SAF). By 1973 military initiative passed to the government and foreign aid was instrumental in upgrading the SAF.

Over the next several years, the SAF was effective in eliminating the majority of the DLF, later renamed the Popular Front for the Liberation of Oman (PFLO). By the late 1970s and early 1980s, defense expenditures had more than doubled and the SAF began to take on a modern look.

b. Command structure. The operational command and administration of the armed forces are vested in the Commander in Chief, who has the additional post of Defense Minister. The sultan is the actual Commander and Defense Minister. The Armed Forces General Staff is currently the Army General Staff. The principal Army, Navy, and Air Force organizations are commanded by British officers. [Figure 2-33](#) depicts Oman's military command structure.

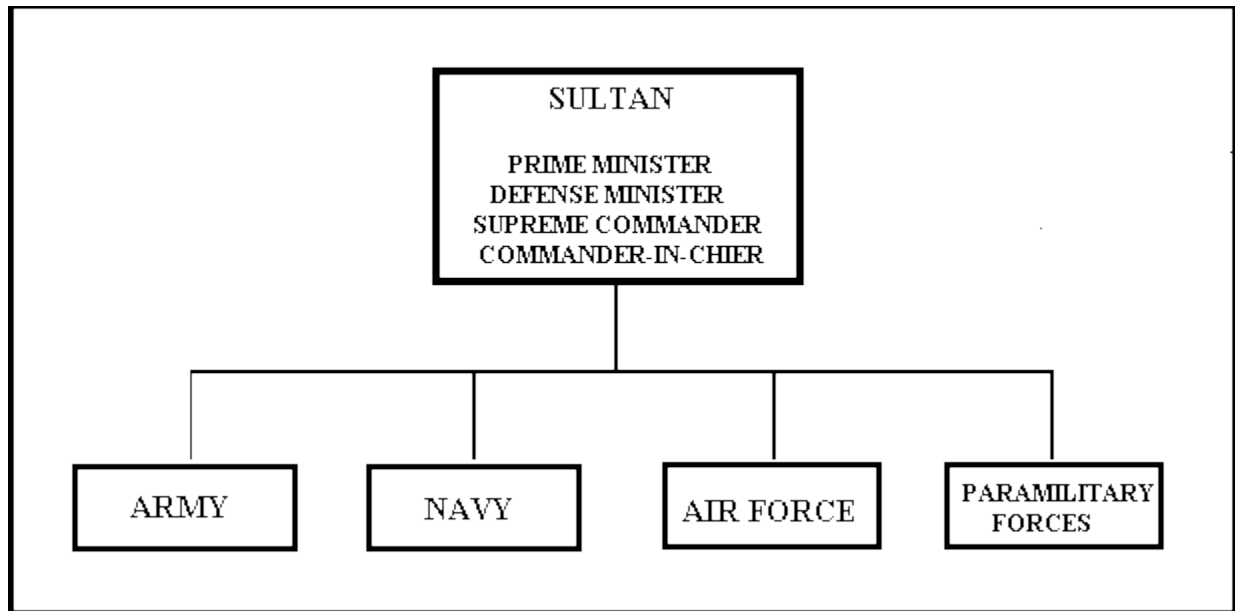


Figure 2-33. Omani Armed Forces command structure.

c. Armed forces. The Omani Armed Forces are charged with defending the country, protecting the monarchy, and maintaining internal security. Sultan Qaboos serves as the Prime Minister, Defense Minister, Supreme Commander, and Commander in Chief of the Armed Forces. He was trained at the British Royal Military Academy and served as a junior officer in the British Army. This background, when combined with subsequent intensive years of force development and war against the Dhofar insurgency, closely identifies Sultan Qaboos with the armed forces. Omani Armed Forces consist of approximately 29,500 personnel (including paramilitary) plus 3,700 foreign personnel. Out of the population's 348,850 males between the ages of 15 and 49 years of age, roughly 197,870 are fit for military service.

d. Army. The Army numbers 25,000, and service is voluntary. The type of Army units are listed at [Table 52](#).

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Table 52. Omani Army units.

1 x Division headquarters
2 x Brigade headquarters
8 x Infantry regiments including 3 x regiments of Baluchistani (Pakistan) troops
1 x Armored regiment with 2 x tank squadrons
2 x Artillery regiments
1 x Field engineer regiment with 3 x squadrons
1 x Infantry reconnaissance regiment with 3 x recon companies
2 x Independent recon companies
1 x Royal Guard brigade
1 x Armored reconnaissance regiment with 3 x armored car squadrons
1 x Airborne regiment
1 x Air defense battery
1 x Independent rifle company (Musandam security force)

NOTE: Some regiments do not have battalions; instead, their subordinate units are squadrons (at squadron strength) or companies (at company strength).

e. Air Force. The Air Force numbers 4,100, mostly ex-British RAF pilots and technicians; service is voluntary. Air force units include 2 x FGA squadrons, 1 x FGA/reconnaissance (RECCE) squadron, 1 x training squadron, 2 x helicopter squadron, 3 x transport squadrons, 2 x SAM air defense squadrons, and 1 x royal flight detachment.

f. Navy. The Omani naval strength is listed at 4,200 personnel; naval service is also voluntary. Naval equipment includes 4 x missile craft, 8 x patrol craft, 5 x amphibious landing ships, 1 x training ship, and 1 x amphibious logistical support ship. Major bases are at Seeb, Wudam, Raysut, Ghanam islands, and Alwi.

g. Paramilitary forces. Oman's paramilitary forces consist of a tribal home guard (Firgat) with 3,500 troops, a police coast guard with 400 troops (manning antitank APCs and 11 x inshore patrol craft), and 1 x police air wing.

h. Royal Household. The Royal Household has approximately 4,000 troops. It consists of 1 x royal guard brigade of 3,000 and 1 x SF regiment of 300. Furthermore, the royal yacht squadron, based at Muscat, has 150 naval personnel, and are manning 1 x royal yacht and 1 x royal yacht support ship. Additionally, there is a royal flight detachment of 250 flight personnel for 5 x aircraft and 6 x helicopters.

PART F: QATAR

1. General information. Qatar (KAH tuhr) is an Arab sheikdom which occupies a low, sunbaked peninsula jutting into the Persian Gulf from the eastern Saudi Arabian mainland. While only 162 km long, the peninsula separates the Persian Gulf from the Gulf of Bahrain. Doha on the eastern coast is the capital and largest city. [Figure 2-35](#) is a country outline of Qatar.

2. Statistical Data.

Name:	State of Qatar (El Qatr)
Capital:	Doha
Population:	670,274 (July 1997)
Area:	11,437 km ²
Ethnic divisions:	40% Arab, 18% Pakistani, 18% Indian, 10% Iranian, and 14% other
Language:	Arabic; English commonly used
Literacy rate:	79.4%
Religion:	95% Muslim, 5% other
GNP:	\$6.6 billion
Per capita income:	\$12,500
Unit of currency:	Qatar rial (QR)
Exchange rate:	\$1 = 3.64 QR
Time zone:	Four hours ahead of UTC; nine hours ahead of US Eastern Standard Time; time zone DELTA
Defense forces:	Army, Air Force, and Navy
Flag (Figure 2-34):	

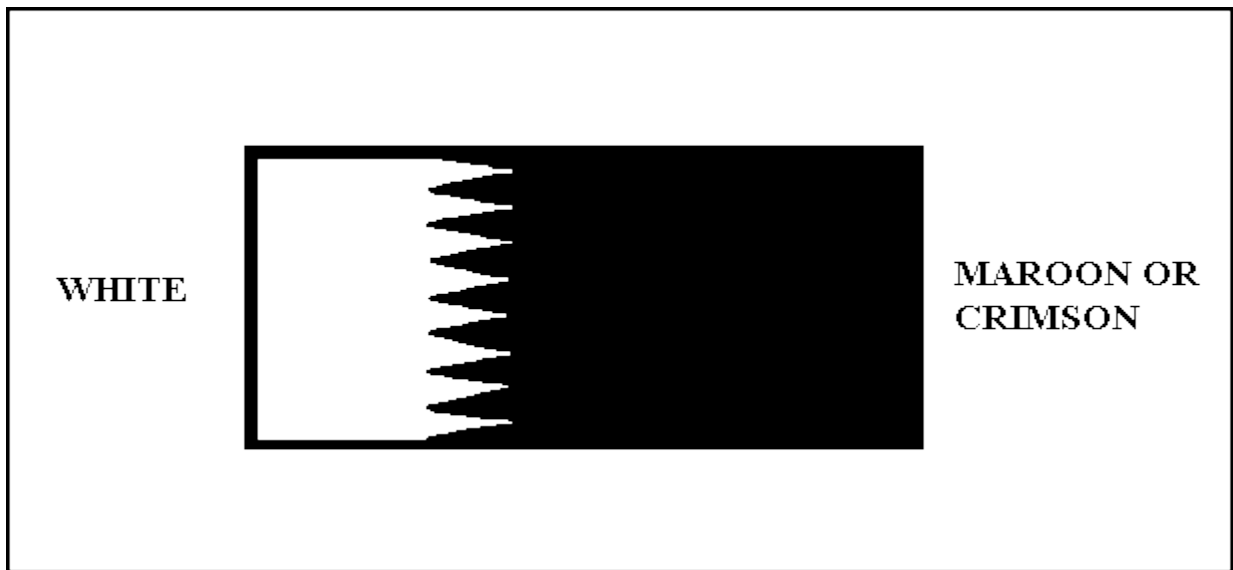


Figure 2-34. Flag of Qatar.

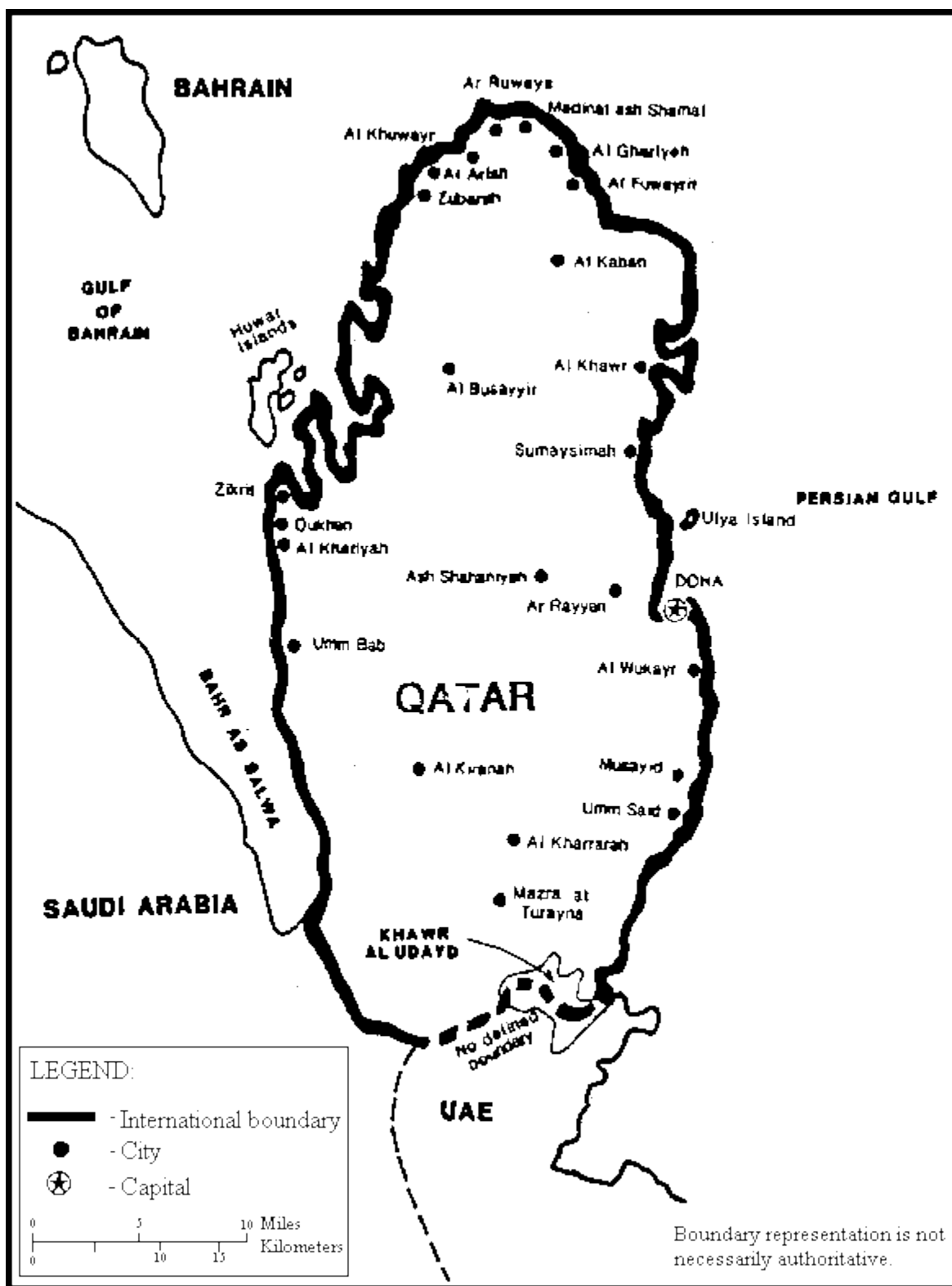


Figure 2-35. Qatar.

3. History.

a. Historical background.

(1) While the early history of Qatar is of little note, archaeological expeditions have found evidence of human habitation in this area dating to 4000 B.C. In 1916 Great Britain attempted to exclude other powers from the area through an arrangement with the sheik of Qatar, who agreed not to cede, mortgage, or otherwise dispose of parts of Qatar territory to any power other than the British Government. A further agreement was made not to enter into any relationship with another foreign government without British consent. In return Britain agreed to protect Qatar from all aggression by sea and to lend her support in case of an overland attack.

(2) The discovery of oil in the late 1930s promised unlimited prosperity for Qatar. However, oil exploration was postponed by the outbreak of World War II. The production of oil on a commercial scale did not begin until 1949. As a result of this new industry, the sheikdom took a leading role in the formation of a gulf federation, which was later to become the UAE. In 1961 Qatar joined the Organization of Petroleum Exporting Countries (OPEC) and in 1970 became a member of the Organization of Arab Petroleum Exporting Countries (OAPEC).

(3) A provisional constitution was announced in April 1970 and in the following month the first cabinet was formed. Qatar decided to remain outside the gulf federation and became independent on 3 September 1971, joining the UN and the Arab League.

b. Recent history.

(1) In February 1972 Sheik Khalifa Al-Thani, with the support of the ruling Al-Thani family, seized power after a bloodless coup deposed his cousin, Sheik Ahmad Al-Thani. Since his accession, Sheik Khalifa has sought discreet changes while preserving the Islamic way of life. He has also attempted to avoid complete dependence on Qatar's oil reserves and has encouraged the growth of other industries.

(2) Since independence, Qatar has earned a reputation as a moderate Arab state. Along with the rest of the Arab world, Qatar opposed the Camp David agreements between Egypt, Israel, and the US and the resulting Egyptian-Israeli peace treaty signed in March 1979.

(3) The country is heavily populated by foreign workers. After the invasion of Kuwait by Iraqi troops, Qatar granted multinational forces military access to its peninsula.

4. Weather.

a. Climate.

(1) The climate is characterized by intense heat and humidity between June and September ([Table 53](#)). The months of April, May, October, and November are more pleasant. Humidity is oppressive along the coast and reaches as high as 90%, but declines below 30% a few miles inland. Rainfall seldom reaches 13 cm a year; confined to the winter months, the rain falls in short storms that often flood small ravines and the usually dry wadis.

Table 53. Annual temperatures °C.

<u>REGION</u>	<u>WINTER</u>	<u>SUMMER</u>	<u>EXTREMES</u>
	MIN MAX	MIN MAX	MIN MAX
Qatar	7° 26°	25° 45°	4° 49°

(2) The northwesterly winds called the "shamal" and the southeasterly winds called the "sharqi" are the principal winds in the region. The shamal sometimes brings rain in the winter and the sharqi brings hot dry air in the summer. The sharqi frequently causes hazardous sand and dust storms.

b. Light table. Light tables reflect the average times, by month, for sunrise and sunset (Table 54). At the times shown, general outlines may be visible but the horizon is not likely to be distinguishable.

Table 54. Light table.

<u>DOHA, QATAR</u>											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>SUNRISE</u>											
0719	0717	0657	0626	0558	0543	0547	0601	0614	0626	0641	0702
<u>SUNSET</u>											
1755	1818	1835	1850	1904	1920	1928	1919	1853	1821	1753	1743

5. Terrain. Qatar is basically a barren desert consisting of limestone covered with blown sand. At various points, the northwestern coast of this desolate peninsula is less than 40 km from the main island of Bahrain. Qatar varies in width from 56 to 80 km. The southern border is shared with both Saudi Arabia and the UAE. Qatar also has sovereignty over a number of islands. The Huwar Islands off the west coast of Qatar are currently under Bahraini jurisdiction, but they are the subject of a territorial dispute between the two countries.

a. Terrain features. The land is largely flat desert covered with loose sand, pebbles, and sand dunes, broken by occasional outcroppings of limestone. The western coast is marked by low cliffs and sand hills which reach over 75 m high. Wells are numerous in the western area. In the south, sand dunes and salt flats are the predominant terrain features. Low hills run along the southeastern coast. In the north the terrain is quite low, and unlike the south, it supports some

natural vegetation and cultivable land. In the central plateau region, depressions, escarpments, and low hills break up the flat, stony, limestone desert. The plateau descends in elevation from west to east. Trafficability in Qatar is evaluated in [Table 55](#). [Figure 2-36](#) depicts the terrain features.

Table 55. Trafficability.

<u>REGION</u>	<u>TRACKED VEHICLES</u>	<u>WHEELED VEHICLES</u>	<u>REMARKS</u>
All	Almost unlimited mobility except where sand, marsh, cliffs, or hills require bypassing.	Good mobility using existing roads and trails; good cross-country movement except where local surface conditions are impassible.	See FM 90-3 , Desert Operations

b. Urban areas. Over 82% of the total population is estimated to live in the capital city of Doha. The remaining inhabitants live in Dukhan, Umm Said, and a few other smaller towns. Doha, has expanded at an incredible rate in the past few years. When expansion and the subsequent increase in municipal services is complete, Doha will be one of the most progressive and attractive cities to be found in the gulf region. Doha has an excellent system of super highways surrounding the city. The city's internal streets, however, are narrow and often congested.

c. Coasts and beaches. Qatar's 563 km of coastline is low and consists of sand, gravel, and coral reefs. There are numerous small bays, lagoons, and inlets. The country claims 3 nm as the limit of its territorial waters. Coast and beach access to Qatar is evaluated in [Table 56](#).

Table 56. Coast and beach access.

<u>AREA</u>	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
All	Numerous coral reefs and sandbars complicate large scale access to the country by amphibious means. The existing harbors and anchorages provide the best approaches to key areas of the country.	None

6. LOCs.

a. Roads. Road development is accorded priority status since all travel within Qatar is dependent on the road system. Although the roads are well-maintained and link urban areas ([Table 57](#)), city streets are in a constant state of repair. A new modern network of dual highways is being developed. [Figure 2-37](#) locates the main roads.

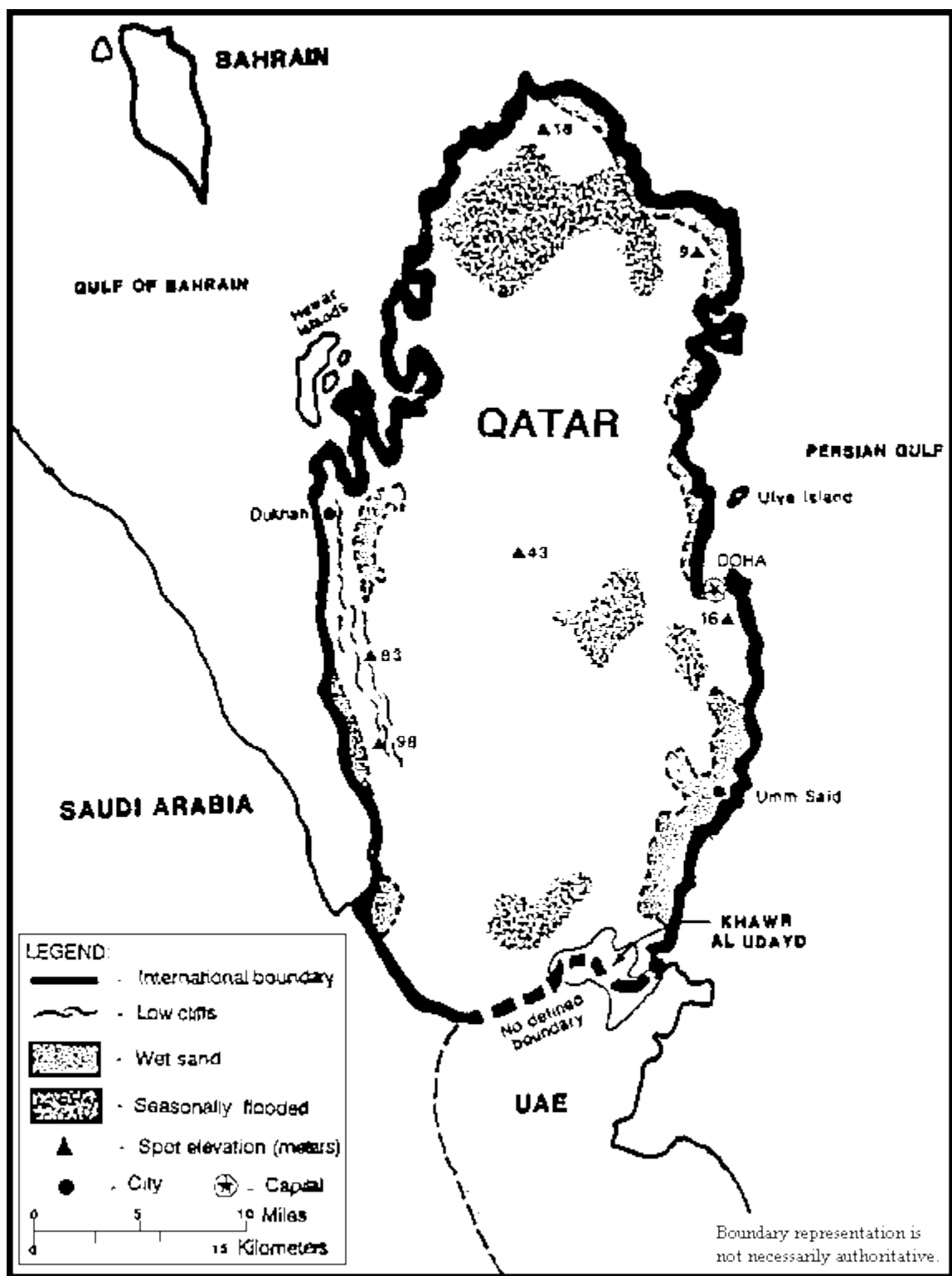


Figure 2-36. Terrain features of Qatar.

Table 57. Roadways.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>
Doha-Umm Said	50 km
Doha-Salwa-Hufuf (Saudi Arabia)	250 km
Doha-Kukhan-Umm Bab	100 km
Doha-Ar Ruways-Zubarah	117 km

b. Railroads. Qatar has no railroads.

c. Ports. Qatar has two major ports, Doha and Umm Said; two minor ports, Zikrit and Ar Ruways; and one offshore oil terminal at Halul Island. A new port is being built at Ulya Island. [Figure 2-37](#) locates port locations and [Table 58](#) provides a list of the major ports and their capabilities. The Qatar National Navigation and Transport Company in Doha is the sole shipping, clearing, and forwarding agent for the ports of Qatar.

Table 58. Ports.

<u>PORTS</u>	<u>TYPE AND CAPABILITIES</u>
Doha	Major port; deep-water quay with four berths; a shallow draft quay with five berths; causeway link to city; cargo off-load by ship's gear; full provisioning.*
Umm Said	Deep-water port; main Qatari oil terminal; three deep-water quays; one for general cargo, and two with buoy moorings for oil tankers; no provisioning.
Halul	Offshore oil terminal; two beths, no provisioning.
*Includes fuel, fresh water, and food.	

d. Air transportation. Qatar has one international airport which is located at Doha. [Tables 59](#) and [60](#) identify the air network and airfields. [Figure 2-37](#) locates the airfields. The country has no national airlines; however, Qatar holds part ownership in Gulf Air and Gulf Helicopters along with Bahrain, UAE, and Oman. Headquartered in Bahrain, Gulf Air links the major Persian Gulf cities with other international cities.

Table 59. Air transportation network.

<u>AIRFIELDS</u>	<u>4 (4 USABLE)</u>
Runway Type	
Permanent surface	1
Unpaved fields and usable airstrips	1
Runway Length*	
Over 3,600 m	1
1,200-2,400 m	2
*Runway lengths are for paved and unpaved usable airfields only.	

Table 60. Airfields.

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
Al Ghariyeh	Government controlled field on NE coast; 92 km N of Doha; one 1,250 m sand runway on coastal plain, used by patrol aircraft of Qatari Air Force.
Doha International	Civil aviation terminal; 5.5 km SE of Doha; one 4,572 m asphalt runway; sited on a level, sandy desert, coastal plain; major commercial facility;also used by Qatari Air Force.
Umm Said	Civil aviation field; 5.5 km W of Umm Said, one 1,235 m sand runway; sited on coastal plain.

e. Pipelines. The Qatari pipeline system transports crude oil from the oil fields to the refineries. The main pipeline extends from the oil fields of Dukhan to a loading terminal at the port of Umm Said. Underwater pipelines transport oil from the fields around Halul Island to a nearby oil terminal as well as to Umm Said. The natural gas pipeline runs from the Dukhan field to Doha. [Figure 2-37](#) and [Table 61](#) locate and identify the pipeline network.

Table 61. Pipelines.

<u>TYPE</u>	<u>LENGTH</u>
Crude oil	235 km
Natural gas	400 km
<u>MAJOR PIPELINES</u>	<u>DESCRIPTION</u>
Dukhan-Umm Said	Crude oil; 117 km; links oil field with the loading terminal at the port.

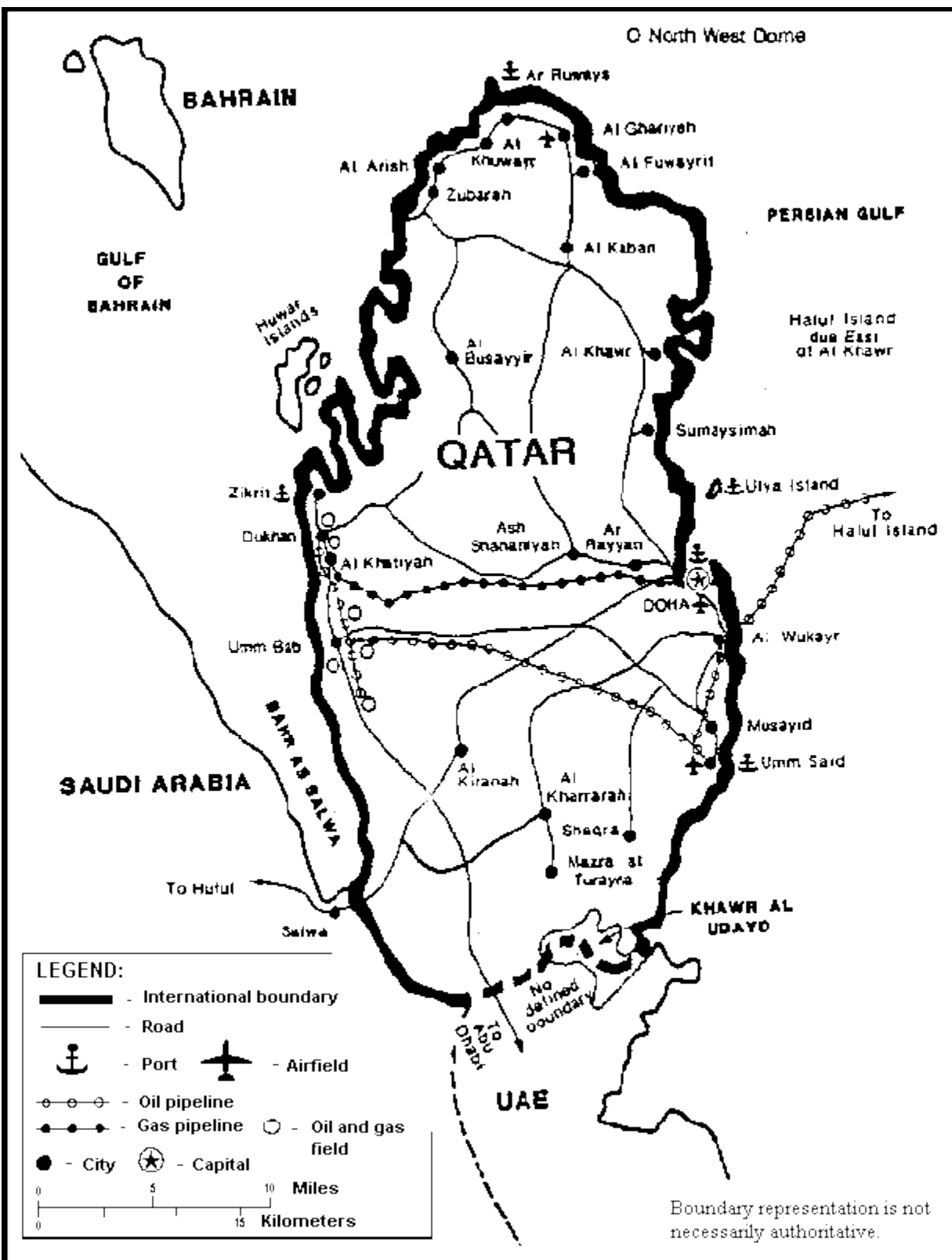


Figure 2-37. Ports, airfields, and pipelines of Qatar.

7. Military capabilities.

a. Background. The end of British presence in the Persian Gulf spurred the development of the country's small but highly rated military force. Personnel in Qatar's Armed Forces have historically been drawn from members of the leading tribes. The army also includes a large number of Saudi, Yemeni, and Baluchi mercenaries who, until Khalifa became Emir, had been paid directly from the ruler's personal funds; however, since that time they have been paid by the government. Most officers are British; the remainder are Jordanians and Pakistanis.

b. Command structure. The defense structure is headed by the Crown Prince who is also the Defense Minister. Members of the Al-Thani royal family have exclusive command over the defense establishment. As the Supreme Commander, the Emir is assisted by the Defense Council and by the Commander of the Internal Security Organization. [Figure 2-38](#) depicts the military command structure.

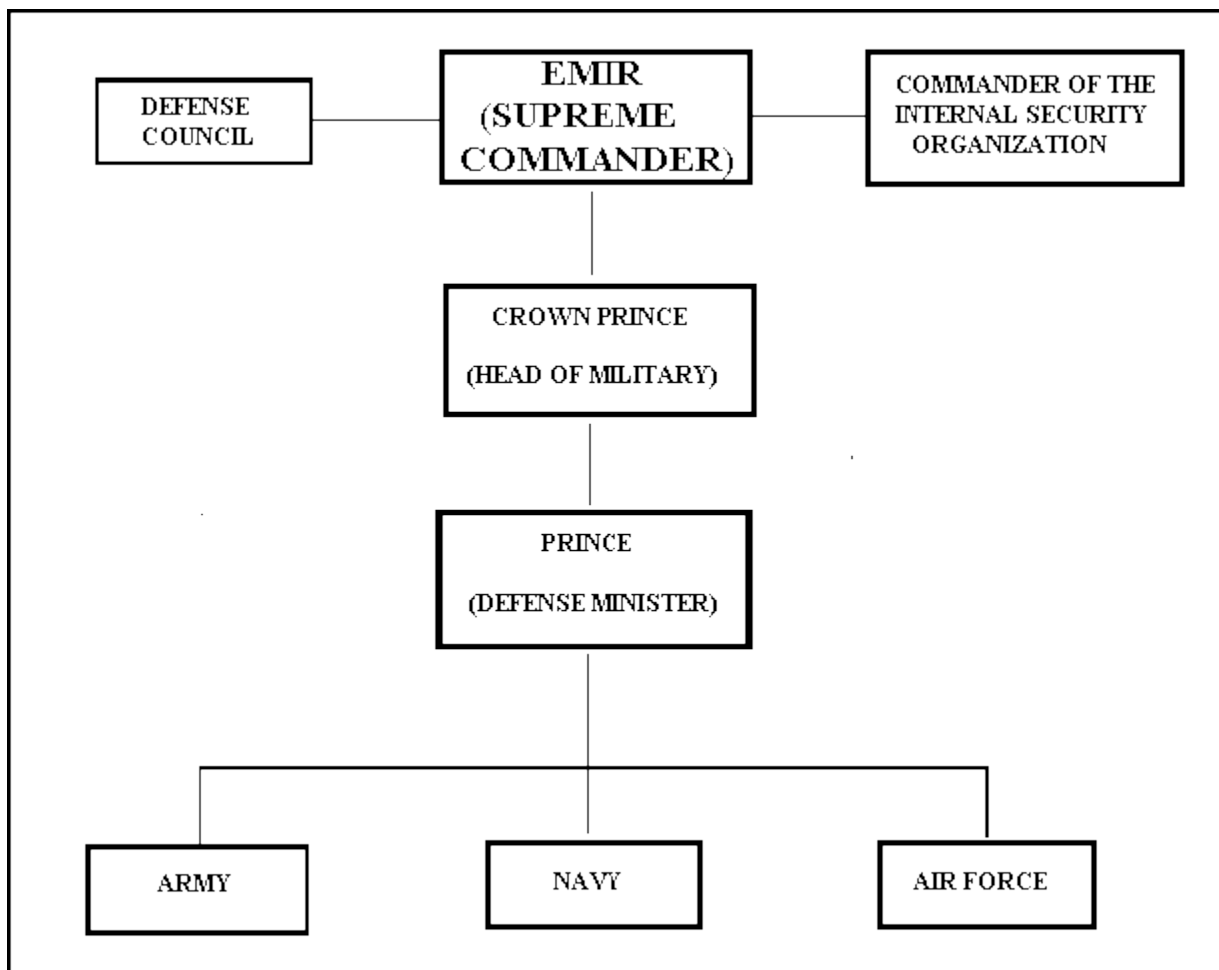


Figure 2-38. Qatari Armed Forces command structure.

c. Armed Forces. Qatar's limited self-defense force is maintained to preserve internal security and defend against small border incursions. The Qatari Armed Forces are made up of the Army, Navy, and Air Force. The total strength of the Armed Forces is approximately 11,800 active personnel. There are approximately 235,500 military age personnel available, with 125,600 fit for service.

d. Army. The Army totals approximately 8,500 personnel. The army's mission is to defend the country's landmass. The types of army units are shown in [Table 62](#).

Table 62. Qatari Army units.

1 x Royal guard regiment
1 x Tank battalion
3 x Mechanized infantry battalions
1 x Field artillery regiment
1 x SF battalion (company-strength)
1 x SAM battery

e. Air Force. The Air Force is made up of approximately 1,500 personnel and possesses both ground fighters and helicopters. The air force mission is to provide close air support to Qatar's ground forces. Qatar has 1 x air defense squadron, 1 x transport squadron, 1 x FGA tactical support unit, 1 x helicopter attack unit, and 1 x helicopter transport unit.

f. Navy. The Navy totals approximately 1,800 personnel and includes the Marine Police. The Navy's mission is to provide naval support to the country. The major base is at Doha. Ships include 3 x missile craft, 6 x patrol boats, and 1 x amphibious landing craft. The major base is at Doha.

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PART G: SYRIA

1. General information. Syria (SEER ee uh) is an Arab country at the eastern end of the Mediterranean Sea. Modern Syria became an independent country in 1946. In Arabic, the official language, Syria's name is Al-Jumhuriya Al-Arabia Al-Suria. Damascus is the capital and largest city. [Figure 2-40](#) is a country outline of Syria.

2. Statistical Data.

Name:	Syrian Arab Republic
Capital:	Damascus
Population:	16,137,899 (July 1977)
Area:	185,180 km ²
Ethnic divisions:	90.3% Arab, 9.7% Kurds, Armenians, and others
Language:	Arabic (official), Kurdish, Armenian, French, and English widely understood

Literacy rate:	70.8%
Religion:	74% Sunni Muslim, 16% Alawite, Druze, and other Muslim sects, 10% Christian
GNP:	\$20.26 billion
Per capita income:	\$1,670
Unit of currency:	Syrian pound
Exchange rate:	\$1 = 41.8 Syrian pounds
Time zone:	Two hours ahead of UTC; seven hours ahead of US Eastern Standard Time; time zone BRAVO
Defense forces:	Army, Air Force, Navy, Air Defense, and para-military
Flag (Figure 2-39)	

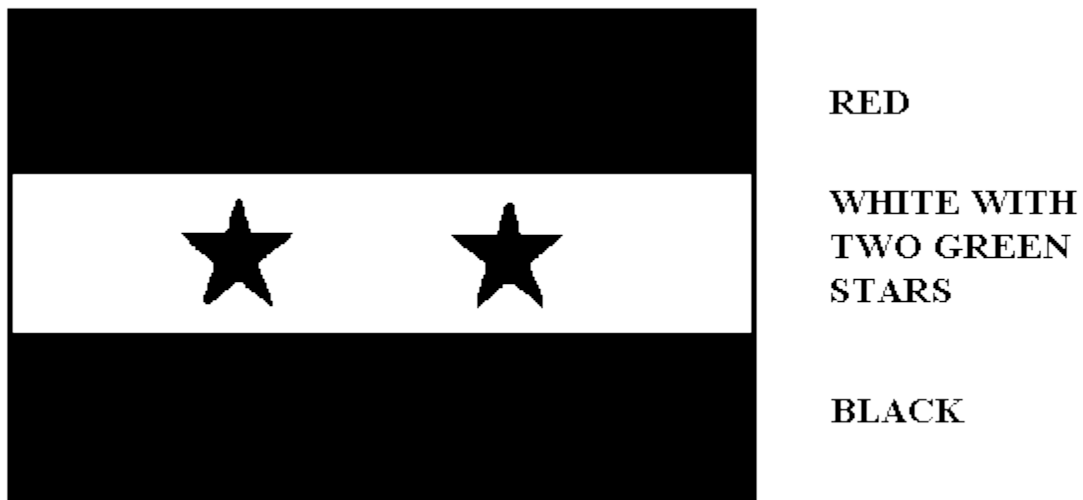
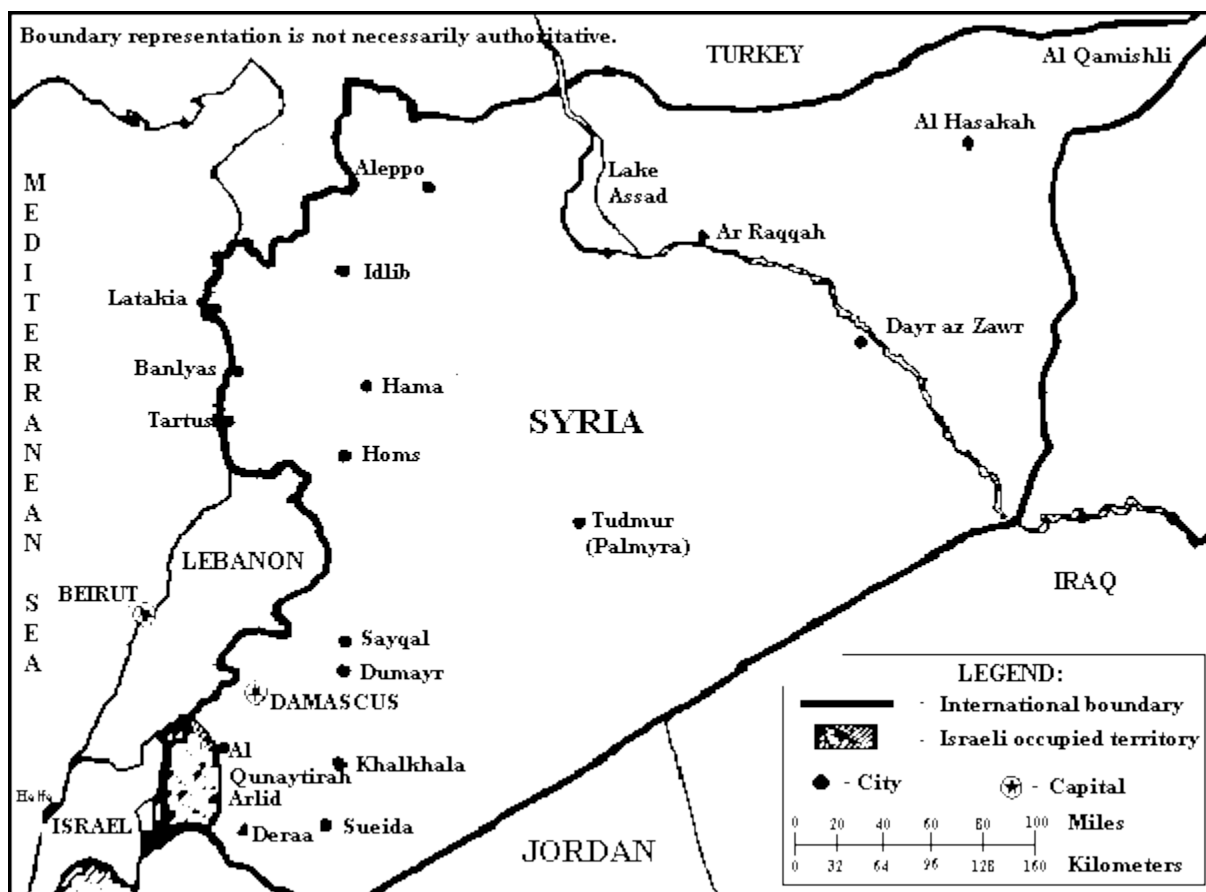


Figure 2-39. Flag of Syria.



3. History.

a. Historical background.

(1) Syria is the name given by the ancient Greeks to the geographical land bridge that lies between the Mediterranean Sea and the Southwest Asian deserts and links three continents. Historians and political scientists usually use the term Greater Syria to denote the area in the prestate period. Greater Syria was originally a coinage of the Ottoman Turks who lost the area to European powers as a result of World War I.

(2) Incorporating some of the oldest continual inhabited cities in the world, Greater Syria was in a unique position to foster intellectual activities. By 1400 B.C. the cities of Damascus, Aleppo, Hama, Byblos, Jofa, Homs, Gaza, Tyre, and Sidon had already been established. Ottoman rule of Greater Syria dates from the early 1500s into the 19th century when European powers had begun to take advantage of Ottoman weaknesses through both military and political intervention. These advances included Napoleon's invasion of Egypt, subsequent British intervention, and French occupation of Lebanon. Western penetration became decidedly political after the Druze uprising in the Syrian province of Lebanon in 1860. The revolt began in the north as a Maronite Christian peasant uprising against Christian landlords. As the revolt moved southward to the territories of the Druze landlords, it increased in scope and resulted in a Druze massacre of over 10,000 Maronites. After the Maronite slaughter, France sent troops into Lebanon,

an occupation which forced new laws for Lebanon. By the Statute of 1861, Mount Lebanon (present day Lebanon) was detached from Syria, and Lebanese administration was transferred to the control of France.

(3) The period from the outbreak of World War I to the granting of France's mandate over Syria by the League of Nations in 1922 was marked by a complicated sequence of events during which Syria saw a brief moment of independence. The move for independence began in 1915 in the Arabian Peninsula when the British, anxious for Arab support, persuaded Sharif Hussain, leader of the Hashimite family and an Ottoman appointee over the Hejaz, to lead the Arabs in revolt against the Turks. In October 1918 an Arab army led by Hussain's son Faisal (Faysal) entered Damascus and immediately assumed control of all Syria except for the coastal areas along the Mediterranean where French troops were garrisoned. In July 1919 Faisal convened the General Syria Congress which declared Syria sovereign and free. The following March that same congress proclaimed Faisal King of Syria.

(4) Early in World War I, the French, British, Italians, and Czarist Russians met secretly to decide the fate of the Arab lands. This meeting resulted in the Sykes-Picot agreement, signed only six months after Hussain had vaguely been promised an Arab kingdom. In 1919 Faisal attended the Versailles Peace Conference where his pleas for a sovereign Syria went unheard. Disappointed by his failure at Versailles, Faisal returned to Damascus and declared Syria free and independent. During the San Remo Conference April of 1920, Great Britain and France partitioned the Arab world into mandates. Syria became a French mandate and French soldiers marched from Beirut to Damascus where, by 25 July 1920, they crushed all Arab resistance in the city. Syria remained under French rule and became a refuge for persecuted groups from neighboring countries during the 1920s and 1930s. The World War II entry of allied troops brought a promise of eventual independence from the French. Syria elected a parliament in 1943, and in 1944 the Syria Government took over the functions of the 14 administrative departments. France, however, continued to control social, cultural, and educational services as well the Troupes Speciales du Levant, a specially trained unit employed for security purposes.

(5) Syria and Lebanon were recognized as countries in July 1944 by the Soviet Union and in September 1944 by the United States. British recognition followed the next year. These allied nations brought pressure on France to evacuate Syria. The new Syrian Government demanded the withdrawal of French troops under the threat of a Syrian-formed national army. France finally agreed to withdraw its forces, but only after Syria's ratification of a treaty which gave France a privileged position in the country. In January 1945 the Syrian Government announced the formation of a national army and in February declared war on the Axis powers. In March 1945 the country became a charter member of the United Nations, an indication of status as a sovereign nation. In April 1945 Syria affirmed its allegiance to the idea of Arab unity by signing the pact of the League of Arab States (Arab League).

(6) The already embittered feelings that the Syrians had for France were increased when France demanded that its cultural, economic, and strategic interests be protected by treaty. This demand caused demonstrations in Damascus and Aleppo for the third time in 20 years. It was only after Prime Minister Churchill threatened to send in British troops that France began to withdraw. By 15 April 1946, all French troops had left Syria soil. On 17 April 1946, Syria celebrated Evacuation Day, which is now Independence Day and a national holiday.

b. Recent history.

(1) Syrian began independence under President Kuwatly, who was backed by a splintered parliament having no real leadership. The first crisis for the newly formed government was the creation of Israel. In May 1948 Syrian troops along with other Arab armies invaded Israel. By the end of 1948 the Syrians were sorely disappointed in their government's failure to defeat Israel and in their inability to move ahead in a cohesive fashion. During the period from 30 March 1949 to 25 February 1954, four coups d'etat took place. By 1955 the balance of power began to swing in favor of Syrian left-wing elements. The rise of the left-wing brought about closer relations with the Soviet Union and other communist countries. Several barter and cultural agreements were concluded with the Soviet Bloc between 1954 and 1956; missions were exchanged; and an arms deal was made in 1956. During this same period, Syria became increasingly isolated from its Arab neighbors.

(2) Because of the growing swing to the left Syrian officials were able to convince the Egyptians that a union was necessary to avert a Communist takeover. In February 1958 a union with Egypt was announced which formed the UAR. The form in which the UAR emerged was not what the Syrians had envisioned. Nasser was chosen as President of the republic and while making little apparent effort to placate Syrian dissatisfaction, continued with his planned integration of the UAR. On 28 September 1961 a military coup was staged in Damascus, and Syria seceded from the UAR.

(3) In the period between 1961 and 1966, all competing factions and interest groups in Syria became involved in the fight for power. This period was a time of coups and counter-coups as well as the rise to power of the Baathist Party. During this period several different governments were no sooner formed than they were abolished.

(4) In February 1966 in the bloodiest coup d'etat since 1949, radical Syrian Army Baathists, led by Salah Jadid, seized control of the government. The conflict was primarily between two factions of the Baath Party. After seizing the radio station, one of the first acts of the new government was to announce the appointment of Major General Hafez al Assad as Minister of Defense.

(5) The defeat of Syria and Egypt in the 1967 war with Israel discredited the radical socialist regimes of Nassar's Egypt and Jadid's Syria. This defeat was the catalyst for Assad's rise to power in Syria; Assad blamed Jadid's fraction for the debacle in 1967 and the two Baathist's fractions heightened their conflict until February 1969, when they

agreed to an uneasy coexistence. Outbreak of the Jordan Civil War in September 1970 led to a final settlement of this intra-party conflict. As Air Force Chief, Assad refused to provide air support for Syrian troops sent to the aid of the PLO in Jordan. Jadid's groups demanded Assad's resignation, but Assad ignored the demands and he took power in a bloodless coup on 16 November 1970. Assad has remained in power ever since their achievement of independence. However, he has maintained this stability only by being an iron-fisted blood-thirsty dictator.

(6) During the recent Gulf War, Syria sided with the US and multinational forces by sending one division to Saudi Arabia in support of Kuwait and Saudi Arabia.

4. Weather.

a. Climate.

(1) The Syrian climate is predominantly dry; the most striking feature is the contrasting influences of the Mediterranean Sea and desert regions. Between the humid Mediterranean and the arid desert regions lies a semiarid steppe zone extending across three fourths of the country ([Table 63](#)).

Table 63. Annual temperatures °C.

<u>REGION</u>	<u>WINTER</u>	<u>SUMMER</u>	<u>EXTREMES</u>
	MIN MAX	MIN MAX	MIN MAX
Western-Coastal Area	2° 12°	21° 35°	-2° 40°
Damascus	3° 12°	16° 38°	-7° 45°
Deserts	8° 18°	25° 40°	-8° 43°
North/Steppe Zone	0° 13°	18° 35°	-12° 40°

(2) The western portion of the country is bordered by the Mediterranean Sea. While frost is unknown at lower elevations, the mountains are sometimes snow-covered. Rainfall in this area is fairly abundant with annual precipitation ranging between 75 to 100 cm. Most of the rain, which is carried by winds from the coastline, falls between November and May. Rainfall is basically blocked on the west side of the Jabal an Nusayriyah Mountain Range preventing the moisture from passing over the mountains from the west to the east. The result is an arid zone with warm, dry winds and scanty rainfall on the east side of the mountain range.

(3) Farther south, in a portion of the semiarid climatic zone, lies Damascus with an average rainfall of less than 20 cm a year, most of which occurs between November and February.

(4) In the desert region of southeast and central Syria, the humidity decreases and annual precipitation falls below 10 cm. The scanty amounts of rain are highly variable from year to year, thus causing periodic droughts. Sandstorms are common during February and May. In the northern regions of the country, precipitation averages 20 to 25 cm a year; daytime temperatures are high during the summer months; and there are severe frosts from November to March.

b. Light tables. Light tables reflect the average times, by month, for sunrise and sunset ([Table 64](#)). At the times shown, there is enough light for general outlines to be visible, but the horizon generally cannot be distinguished.

Table 64. Light table.

<u>DAMASCUS, SYRIA</u>											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>SUNRISE</u>											
0638	0630	0603	0523	0446	0425	0427	0446	0507	0538	0552	0619
<u>SUNSET</u>											
1637	1705	1730	1754	1816	1838	1848	1834	1800	1719	1643	1626

5. Terrain. Syria is in a strategic geographic location and is the mixing bowl for a number of cultures. The country consists of approximately 185,185 km² of desert, plains, and mountains (including 1,295 km² of Israeli-occupied territory). Syria is divided into a coastal zone with a narrow, double mountain belt enclosing a depression in the west and a much larger plateau to the east. Syria is bordered by Turkey to the north, Lebanon and the Mediterranean Sea on the west, Israel and Jordan to the south, and Iraq on the east ([Figure 2-41](#)).

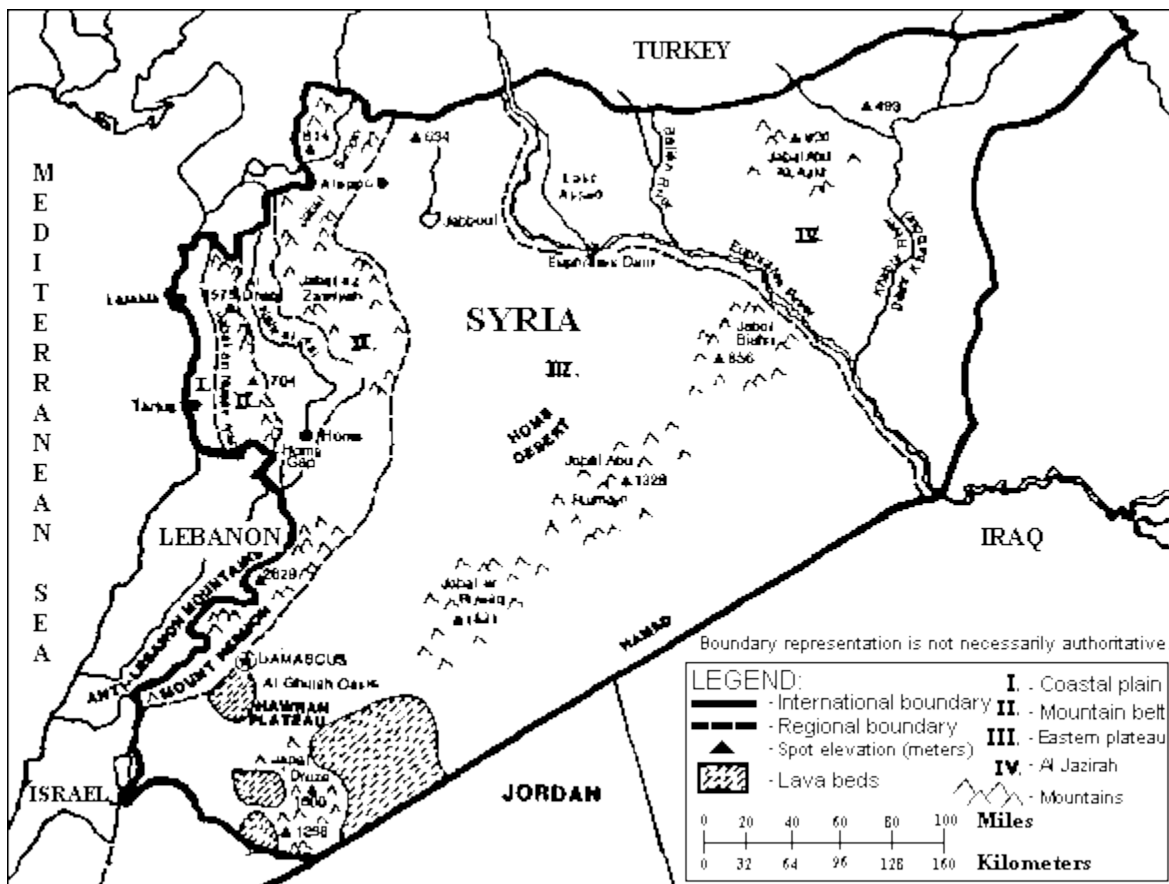


Figure 2-41. Terrain features and natural regions of Syria.

a. Terrain features.

(1) Along the Mediterranean, a narrow coastal plain stretches from the Turkish border to Lebanon. The maximum width of this plain is 32 km, and in some places the mountains meet the sea. The plain is made up of lagoons, swamps, and cultivated areas. Small towns and ports are scattered throughout the region.

(2) The Jabal an Nusayriyah Mountain Range parallels the coastal plain and averages over 1,212 m in elevation. Nabi Yunis, the highest peak is 1,575 m. The western slopes catch the moisture-laden sea winds and are thus more fertile and more heavily populated than the eastern slopes. Before reaching the Lebanese border and the Anti-Lebanon Mountains, the Jabal an Nusayriyah Range ends, leaving a corridor--the Homs Gap. For centuries the Homs Gap has been a favorite trade and invasion route from the coast to the country's interior. Eastward, the line of the Jabal an Nusayriyah is separated from the Jabal az Zawiyah Range and the plateau region by the Al Ghab Depression, a fertile, irrigated trench crossed by the meandering (river) al Asi. Inland and farther south, the Anti-Lebanon Mountains rise to peaks of over 2,700 m on the Syrian-Lebanese frontier and spread in spurs eastward toward the plateau region. Vegetation on the eastern slopes, which receive little rainfall, consists of sparse grasses or shrubs. Water is available in numerous streams, springs, and wells. Deep snow is found on the highest peaks. In the southwest the lofty Mount Hermon (Jabal ash Shaykh) descends to the Hawran Plateau.

Volcanic cones, some reaching over 900 m, intersperse the open, rolling, once fertile plateau. Southeast of the plateau lies the high volcanic region of the Jabal Druze Range, which is the home of Syria's Druze population.

(3) The entire eastern plateau region is intersected by a low chain of mountains, the Jabal ar Ruwaq, the Jabal Abu Rujmayn, and the Jabal Bishri, extending northeastward from the Jabal Druze to the Euphrates River. South of these mountains lies a barren desert region known as the Hamad. Northward lies another barren area known as the Homs Desert, which has a hard-packed dirt surface. The terrain is generally distinguished by steep wadi walls, scattered hillocks, and minor escarpments generally less than 45 m high. Water is available in wells, cisterns, and springs that may be 25 to 30 km apart along major trails.

(4) The rolling upland region northeast of the Euphrates River is the fertile al Hazirah (the island), watered by the tributaries of the Euphrates and the Khabur Rivers. The Euphrates River is generally more than 150 m wide and 6 to 12 m deep from early February through June. During the rest of the year the river is normally no more than 30 m wide, less than 3 m deep, and the banks are low and muddy. Trafficability in Syria is evaluated in [Table 65](#).

b. Urban areas.

(1) Damascus, one of the oldest cities in the world, was a seat of Christianity until it fell to the conquering armies of Islam in the seventh century A.D. The city is divided into two sections, the modern section with tall buildings and wide streets, and the old city with narrow, twisting streets and crowds of people. With a rapidly increasing urban population, Damascus is faced with housing shortages and inadequate municipal services for sewage disposal and potable water. Health conditions have generally improved, but there is still a high incidence of infectious diseases, heart problems, and cancer.

(2) Secondary urban areas include Aleppo, Homs, Hama, and Latakia. Massive growth in these cities has caused problems similar to those in Damascus.

Table 65. Trafficability.

<u>REGION</u>	<u>TRACKED VEHICLES</u>	<u>WHEELED VEHICLES</u>	<u>REMARKS</u>
Coastal Plain	Fair to good movement and maneuver. This area is compartmented by mountain spurs which run directly to the sea and is broken by swamps and cultivated	Fair movement potential using existing road systems.	The Homs Gap (Figure 2-41) is a traditional invasion route from the coast into the interior.

areas. Large scale movement will be restricted to the present road system which parallels the coastline.

Mountain Belt	North-south movement possible in foothills, small unit deployment in the higher areas on or adjacent to the road system. East-west movement only through passes or Homs Gap.	Poor except on existing road system.	See FM 90-6 , Mountain Operations.
Al Ghab Depression	This river valley offers good movement and maneuver potential, but it is compartmented by the bordering mountain ranges.	Good on existing road systems. River crossing only on bridges.	None
Eastern Plateau	Trafficability is generally good in this broken desert region. Local surface conditions may restrict or channelize movement, but the area is generally suitable for large scale maneuver.	Fair to good depending on local road and desert surface conditions.	See FM 90-3 , Desert Operations.
Al Jazirah	This extensively cultivated areas is excellent for tactical operations. Canals, streams, and rivers may channelize movement to some degree.	Good movement potential especially on local road network.	None

c. Coasts and beaches. The Syrian coastline covers 193 km on the Mediterranean Sea. Syria claims 35 nm as the limits of its territorial waters. For information regarding coast and beach access, see [Table 66](#).

Table 66. Coast and beach access.

<u>AREA</u>	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
Tartus Area	Narrow beaches, widening south of Tartus near the Lebanese border. Reefs and shoals may hinder access to local areas. Beach areas may not be sufficient to allow deployment.	Leads to Homs Gap, which is a traditional invasion route into the interior.
Latakia Area	Narrow beaches, widening south of Latakia. To the south, reefs and shoals will hinder amphibious movement in some areas. Wider beaches allow some scope for maneuver and deployment.	Leads to valley at north end of Jabal an Nusayriyah Mountains giving access to the interior in the area of Aleppo.

6. LOCs. At the San Remo Conference of April 1920, the Ottoman province of Syria was divided. The Levant Coast was mandated to France. Palestine was mandated to Britain, and the Vilayet of Alexandretta was ceded to Turkey. This caused Syria to lose her two ports, Beirut and Alexandretta, plus other important connecting road and rail segments. It also caused a fragmentation of the transportation network and a disruption of links between key Syrian cities, the important northeast agricultural area, and the fertile coastal plain. By the 1970s Syria had developed new ports, and the transportation network was reestablished so that it once again connected the main population and economic areas. Today, however, transportation systems are overtaxed as a result of the country's development and the accompanying increase of transit goods destined for the oil states around the Persian Gulf.

a. Roads. Road systems are generally inadequate for the country's needs. About 95% of the freight and passenger traffic moves by truck or bus on the highways. Two-laned paved roads, which represent 99% of the road system, have suffered from overuse and require extensive and frequent maintenance. This poses considerable problems for vehicles transiting the roads. Major upgrading to four-lane highways in the heavily populated western area is in the planning stages. Vehicular travel on dirt roads during the rainy season is hazardous, as stretches become completely washed out. Highway driving at night is also dangerous. Syria's road network and main routes are identified in [Table 67](#). [Figure 2-42](#) locates the main road routes.

Table 67. Roadways.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Damascus-Homs-Hama-Aleppo	346 km	Principal route
Tartus-Baniyas-Latakia	81 km	Principal route

Latakia-Aleppo-Dayr az Zawr-Qusaybah (Iraq)	615 km	7% grade from Latakia to Aleppo
Tartus-Homs-Tudmur-Qusaybah (Iraq)	514 km	None
Baniyas-Hama	83 km	7% road grade
Damascus-Beirut (Lebanon)	89 km	Reaches elevation of 372 m; portions impassable during winter in Lebanon.
Damascus-Tudmur-Dayr az Zawr-Al Qamishli	665 km	None
Damasucs-Rutba (Iraq)	401 km	None
Damascus-Deraa	101 km	None
Tartus-Tripoli (Lebanon)	52 km	None

b. Railroads. The rail system is made up of two separate railroads: the Hejaz Railway and the Northern Railway. The Hejaz Railway is a narrow gauge track serving Damascus and the southwest with connections to Lebanon and Jordan. The Northern Railway is standard gauge track extending from the port of Latakia to the northeastern corner of the country. Both systems are in need of considerable reconstruction. [Figure 2-42](#) locates the main railroad routes. [Tables 68](#) and [69](#) identifies Syria's railroad network and main routes.

Table 69. Railway routes.

<u>MAIN ROUTES</u>	<u>GAUGE</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Aleppo-Adana (Turkey)	Standard	288 km	178 km in Turkey
Aleppo-Latakia	Standard	178 km	None
Aleppo-Hama-Homs-Tripoli (Lebanon)	Standard	290 km	Spur to Tartus; 7% road grade from Homs to 50 km W; 43 km in Lebanon
Aleppo-Hama-Homs-Zahlah (Lebanon)	Standard	318 km	92 km in Lebanon
Aleppo-Hama-Homs-Damascus	Standard	348 km	None
Aleppo-Al Qamishli-Mosul (Iraq)	Standard	634 km	378 km in Turkey; 111 km in Iraq
Aleppo-Dayr az Zawr-Al Qamishli	Standard	572 km	None
Homs-Tadmur	Standard	180 km	None
Damascus-Deraa	Narrow	137 km	Hajaz railroad; continues into Jordan
Damascus-Beirut (Lebanon)	Narrow	117 km	59 km in Lebanon

Tartus-Latakia	Standard	Unknown	Under construction
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c. Ports. The three major ports in Syria are Tartus, Latakia, and Baniyas with a minor port at Jablah. [Table 70](#) provides a list of major ports and their capabilities. [Figure 2-43](#) depicts their locations. The Syrian Navigation Company, headquartered in Latakia, is state-owned, and its vessels sail to other Mediterranean and European ports.

Table 70. Ports.

<u>PORTS</u>	<u>TYPE AND CAPABILITIES</u>
Tartus	Main seaport; 11-13 m draft; maximum deadweight tonnage: 10,000 tons; 12 berths; fresh water; availability of other provisions is unknown.*
Latakia	Syrian naval facility; major port; 8 m draft; 8 berths; roll-on/roll-off; limited provisioning.
Baniyas	Deep draft oil pipeline termina; maximum deadweight tonnage: 127,000 tons; full provisioning available.
*Includes fuel, fresh water, and food.	

d. Air transportation. [Table 71](#) describes the air transportation network. Syria has numerous key airfields depicted in [Table 72](#). [Figure 2-43](#) locates these airfields. Damascus is the principal international airport and the location of the headquarters of Syrian Arab Airlines, the national airlines.

Table 71. Air transportation network.

<u>AIRFIELDS</u>	<u>99 (96 USABLE)</u>
Runway Type	
Permanent surface	24
Unpaved fields and	
usable airstrips	75
Unusable airstrips	3

Runway Length*

2,440-3,660 m	21
---------------	----

1,220-2,439 m	4
---------------	---

Under 1,200 m	71
---------------	----

*Runway lengths are for paved and unpaved usable airfields only.

Table 72. Airfields*.

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
Abu and Duhu	Syrian Air Force field; 51 km S of Aleppo; 72 km NE of Hama; one 3,000 m asphalt runway; sited in shallow cultivated valley.
Al Qusayr	Syrian Air Force field; 5.5 km N of Al Qusayr; 23 km SSW of Homs; one 3,050 m asphalt runway and one 2,500 m graded earth runway; sited on cultivated plain with open ditches.
Sueida	Syrian Air Force field; 15 km W of Sueida; two 3,050 m asphalt runways; sited on a relatively level plain.
Damascus International	Civil aviation terminal; 21 km ESE of Damascus; one 3,300 m and one 3,000 m concrete runways; major commercial activity.
Dayr az Zawr	Civil and Syrian Air Force field; on outskirts of dayr Zawr; two 3,000 m hard surface and one 3,350 m sand runways; sited on relatively flat terrain.
Dumayr	Syrian Air Force field; 6 km SE of Damayr; one 3,150 m concrete runway; sited on a desert plain.
Hama	Syrian Air Force field; 3.6 km SWS of hama; one 2,800 m concrete, one 2,800 m and one 2,700 m graded earth

runways; sited on a broad flat plain.

Al Qamishli	Civil aviation field; 3.6 km SW of Al Qamishli; one 2,750 m runway; sited on flat cultivated area.
Khalkhalah	Syrian Air Force field; 1.6 km NE of Khalkhalah; one 3,000 m and one 2,800 m asphalt runways; sited on a relatively level simiarid plain.
Latakia	Civil aviation field; 19 km SE of Latakia; one 2,500 m asphalt runway; one 1,400 m runway used for helicopter parking; sited on relatively flat coastal plain; 3.1 km from Mediterranean Sea.
Neirab	Civil aviation field; 5.7 km ESE of Aleppo; one 3,020 m asphalt runway; sited on undulating open farland bordered by a village.
Shayrat	User unknown; 31 km SE of Homs; two 3,000 m asphalt runways; sited on a relatively level desert plain with rising terrain to S and SW.

*Runway lengths 2,440 m or longer.

Information about major user and runway dimension on the following airfields is not available from unclassified sources.

An Nasiriyah	Tudmur
Jirah	Rasin el Aboud
Marj Ruhayyil	Sayqal
Mezze	Tabaqah
	Tiyas

e. Water transportation. The country's waterways cover 672 km, but beyond their vital importance to agricultural development, they have little other value. The Euphrates River represents more than 80% of the country's water resources. No information is available concerning trafficability on any of Syria's waterways.

f. Pipelines. Syria's pipeline system is made up of both international and domestic lines ([Table 73](#)). [Figure 2-43](#) locates the major pipelines.

Table 73. Pipelines.

<u>TYPE</u>	<u>LENGTH</u>
Crude oil	1,304 km
Refined products	515 km
<u>MAJOR PIPELINES</u>	<u>DESCRIPTION</u>
TAPLine	International crude oil pipeline; ceased pumping through Syria.
IPC	International crude oil pipeline; ceased pumping.
Crude oil pipeline	Domestic; oil fields in the NE to the sea terminal at Tartus; spur to the refinery at Baniyas, capacity of 15 million tons per year.
Refined products	Domestic; three pipelines lead from refinery at Homs to major consumption centers of Damascus, Aleppo, and Latakia; capacity of each is 350,000 tons per year.

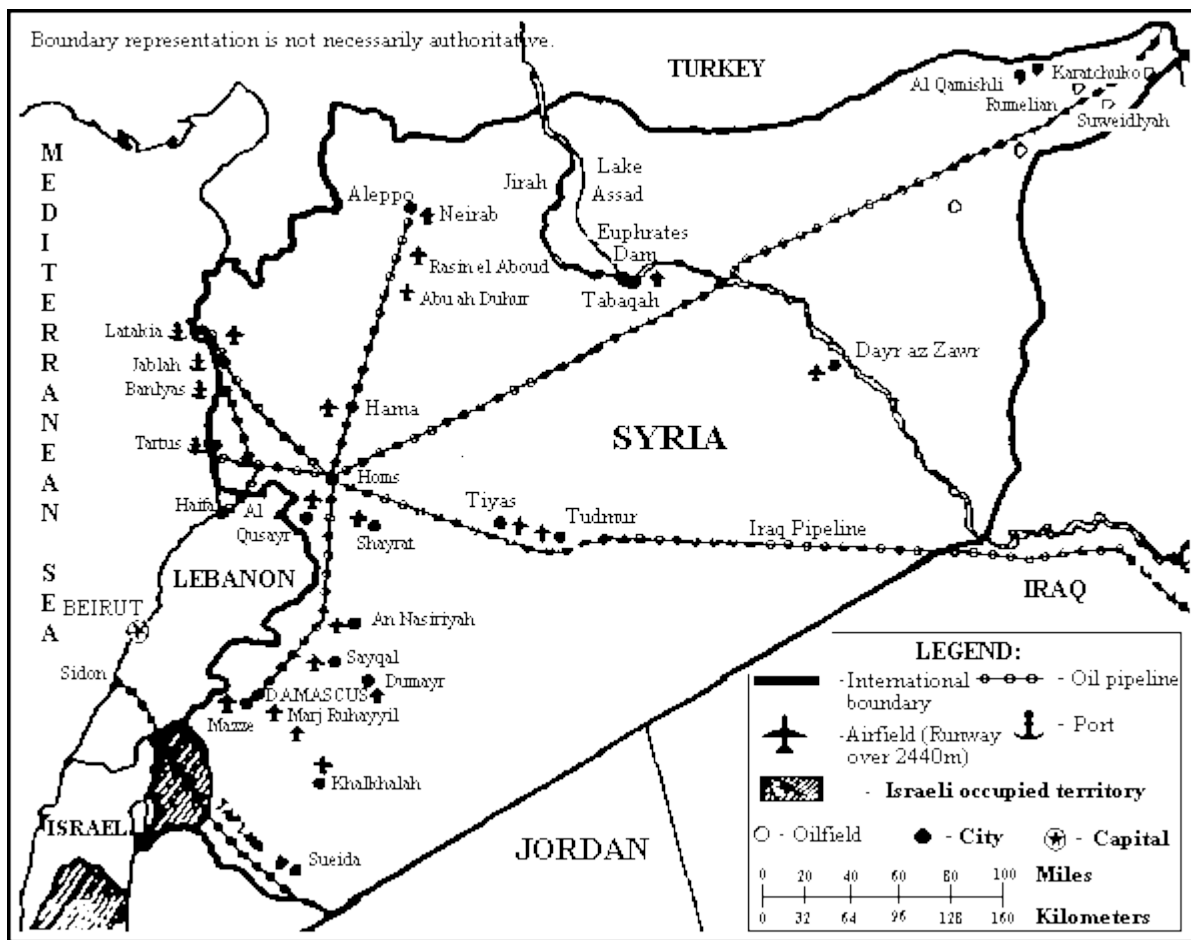


Figure 2-43. Ports, airfields, and pipelines of Syria.

7. Military capabilities.

a. Background.

(1) French mandate authorities were responsible for the initial development of Syria's Armed Forces; however, by the mid-1940s Syrians had developed a profound distrust of the French in particular, and Westerners in general. Two days after Israel became a state, the Syrian Armed Forces along with other Arab League States attacked Israel. Within 10 days it became apparent that the Arab League had grossly underestimated the Israelis. Although Syria lost no ground in this first confrontation with Israel, Syrian forces were totally humiliated. The first of 21 coups in Syria began in March 1949, as did the first of four armistice agreements between the Arabs and Israel. On 6 June 1967 Syria and Israel were again at war, only this time Syria was to lose 1,295 km² of territory on the Golan Heights. The disastrous 1967 Arab defeat led to increased support for the Palestinian guerrilla forces, which had been united with the PLO in 1964.

(2) By 1973, Syria's attempts to professionalize its armed forces had borne fruit. This was largely due to aid from the Soviet Union and Czechoslovakia. On 6 October 1973, Syria and Egypt simultaneously launched attacks into Israel. Although Syria lost more

than it gained during the 1973 war, vast improvements along Soviet lines in Syrian Armed Forces were evident.

(3) Syrian peacekeeping forces in Lebanon were moved quite easily by the Israeli Army in late 1982, when Israel invaded Lebanon. However, the Israelis found that the Syrian Army fought much better than they had in the previous wars. Since the 1982 Lebanon incursion, the Israelis have become concerned over the Soviet upgrades of the Syrian forces.

b. Command structure. The President is the Commander in Chief of the armed forces and army, holding the rank of Lieutenant General. Directly responsible to the President is the Minister of Defense, who also holds the title of Deputy Commander in Chief of the armed forces and army. Third in line is the Deputy Minister of Defense and commander of the air force. Following in line is the Chief of Staff of the armed forces and army. The Chief of Staff of the armed forces works through the general staff, an administrative body that is divided into the usual designated elements such as personnel, intelligence, operations, training, and logistics ([Figure 2-44](#)).

c. Armed Forces. The Army, Navy, Air Force, and the Air Defense command number approximately 406,000 active troops to include 140,000 conscripts. Furthermore, there are 42,000 Syrian forces in Lebanon, and 24,300 paramilitary forces. Additionally, Syria has 400,000 reserves (392,000 Army and 8,000 Navy). Syria continues to insist that the Arab states should be united in all aspects of confrontation with Israel. The present Syrian strategy in Lebanon is intended to ensure stability and order. The official aim is to prevent the partitioning of Lebanon, establish peace and security in Lebanon, preserve the Palestinian resistance, and maintain Syrian harmony in Lebanon. The presence of 42,000 Syrian troops in Lebanon also keeps the Israelis on edge because the Syrians threaten them on two fronts (Lebanon and Golan).

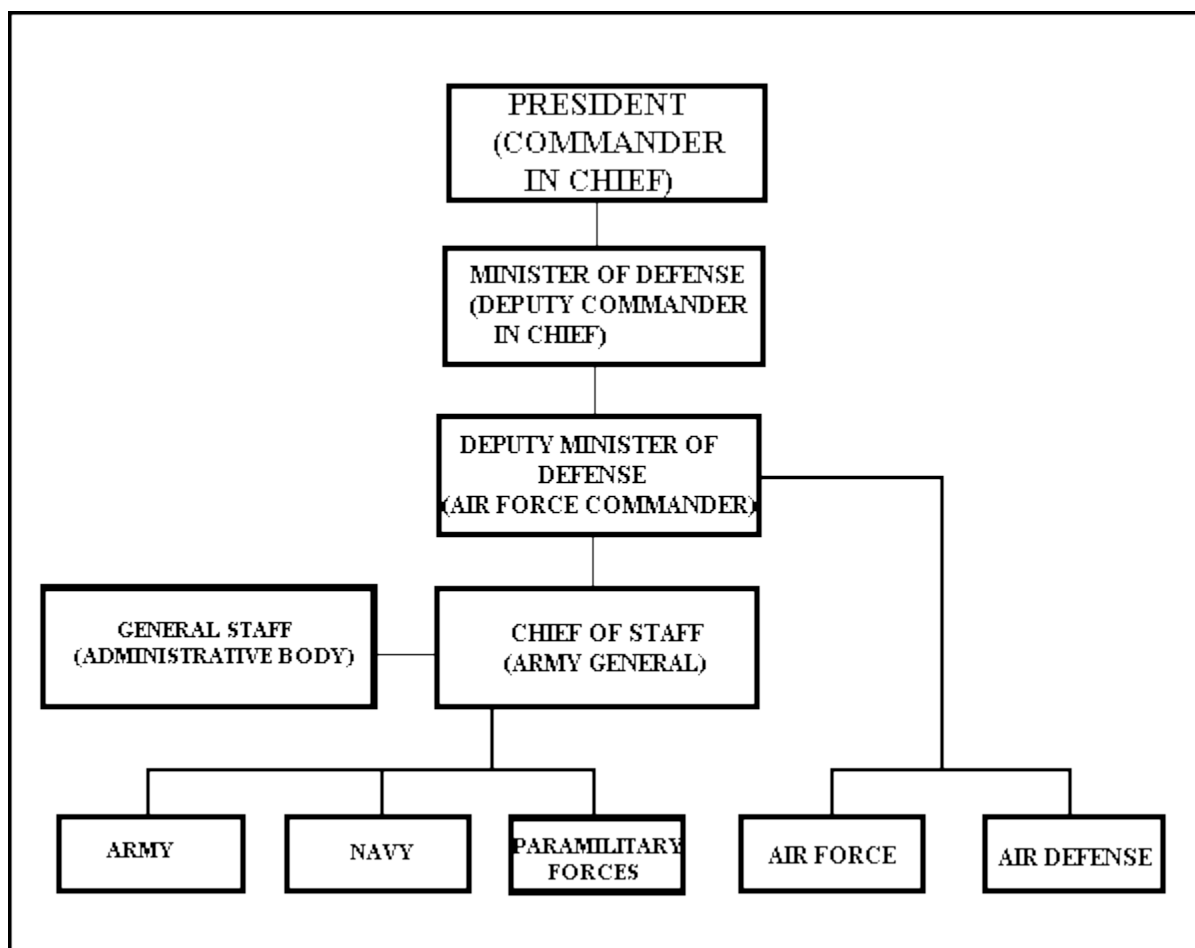


Figure 2-44. Syrian Armed Forces command structure.

d. The Army has the mission of defending the country's land borders and providing security for the President. The Army numbers approximately 300,000 regular officers and men with 100,000 first-line reservists for whom a full, regular issue of equipment is readily available. Total reservists number approximately 392,000. See [Table 74](#) for Army organizations.

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Table 74. Syrian Army organizations.

Active:

2 x Corps HQ

5 x Armored divisions ([Figure 2-45](#))

3 x Mechanized infantry divisions ([Figure 2-46](#))

1 x SF division with 3 x SF regiments

1 x Independent mechanized infantry brigade

2 x Artillery brigades

7 x Independent SF regiments

3 x Surface-to-surface (SSM) brigades to include:

2 x SSM brigades w/3 x battalions w/FROG/Scud missiles

1 x SSM brigade w/3 x battalions w/SS-21 SSM

1 x Coastal defense SSM brigade

2 x Coastal defense brigades

Reserves:

9 x Mechanized & infantry brigades

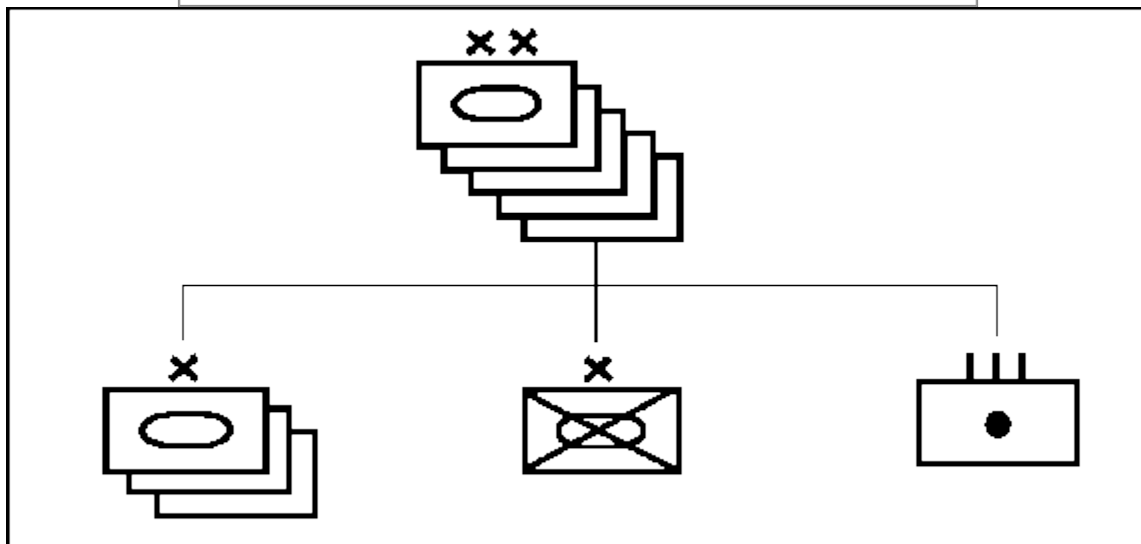


Figure 2-45. Syrian armored division organization.

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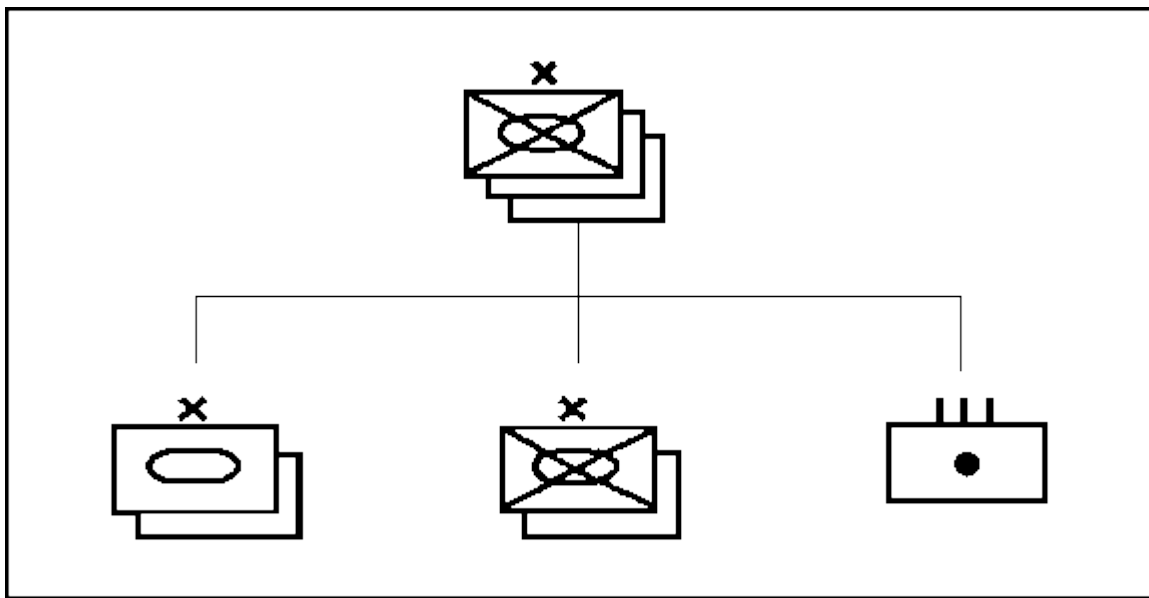


Figure 2-46. Syrian mechanized infantry division organization.

e. Air Force.

(1) The Air Force has the mission of defending Syrian airspace and conducting operations in support of ground forces when in conflict. The Air Force, consisting of 40,000 personnel, has approximately 550 x combat aircraft and 100 x armed helicopters.

(2) The Syrian Air Force is organized into 2 x air divisions, 14 x air brigades, and 1 x air defense command. The fighter interceptor squadrons are the largest group in the air force with 18 x squadrons, following by 14 x fighter ground attack (FGA) squadrons. There are also RECCE, Electronic warfare (EW), and transport aircraft. Additionally, there are numerous attack and transport helicopters.

f. Navy. The Navy has the mission of defending the coastline from attack. The Navy, smallest of the services, has approximately 6,000 naval personnel. Major naval bases are at Latakia, Minet-el-Baida, and Tartus. Ships include 2 x Petya frigates, 20 x coastal patrol and combatants, 9 x minesweepers, and 3 x amphibious landing ships.

g. Paramilitary. The paramilitary forces consist of 3 x brigades with 10,000 Republican Guards, 8,000 gendarmerie, 1,800 desert guard (frontier force), 2 x Palestine Liberation Army (PLA) Saiqa brigades of 4,500 with Syrian officers in Syria and Lebanon, and the Worker's Militia (People's Army) of the Baath Party.

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h. Foreign forces. There are 1,300 United Nations Disengagement Observation Forces (UNDOF) in Syria with contingents from Austria, Canada, Finland, and Poland. Furthermore, the Soviet Union has some 1,800 advisers in Syria.

i. Forces abroad. Syria has 42,000 troops in Lebanon consisting of 1 x corps HQ, 1 x infantry brigade, 8 x SF regiments, and elements of 3 x armored, 3 x mechanized, and 2 x artillery brigades.

PART H: UNITED ARAB EMIRATES

1. General information. The United Arab Emirates (UAE) is an Arab nation in the southern portion of the Persian Gulf on the edge of the Arabian Peninsula. Figure 2-48 is a country outline of the UAE.

2. Statistical Data.

Name:	The United Arab Emirate (Al-Imaaraat-'Arabiyah al-Muttahnida)
Capital:	Abu Dhabi
Population:	2,262,309 (July 1997)
Area:	82,880 km ²
Ethnic divisions:	19% Emirian, 23% other Arabs, 50% South Asian (Fluctuating), 8% others
Language:	Arabic (official), Farsi, English, Hindi, and Urdu widely spoken
Literacy rate:	79.2%
Religion:	96% Muslim, 4% other (Christian and Hindu)
GNP:	\$27.3 billion
Per capita income:	\$12,100
Unit of currency:	Dirham
Exchange rate:	\$1 = 3.67 dirham
Time zone:	Four hours ahead of UTC nine hours ahead of US Eastern Standard Time; time zone DELTA
Defense forces:	Army, Air Force, Navy, and paramilitary
Flag (Figure 2-47):	



Figure 2-47. Flag of the UAE.

3. History.

a. Historical background. Britain has long been involved in the Persian Gulf area. This involvement began in 1820 when the British Navy defeated pirates operating along the Pirate Coast (today's UAE). After this victory Britain concluded treaties with the local tribes and the area became known as the Trucial Coast and the Sheikdoms as the Trucial States.

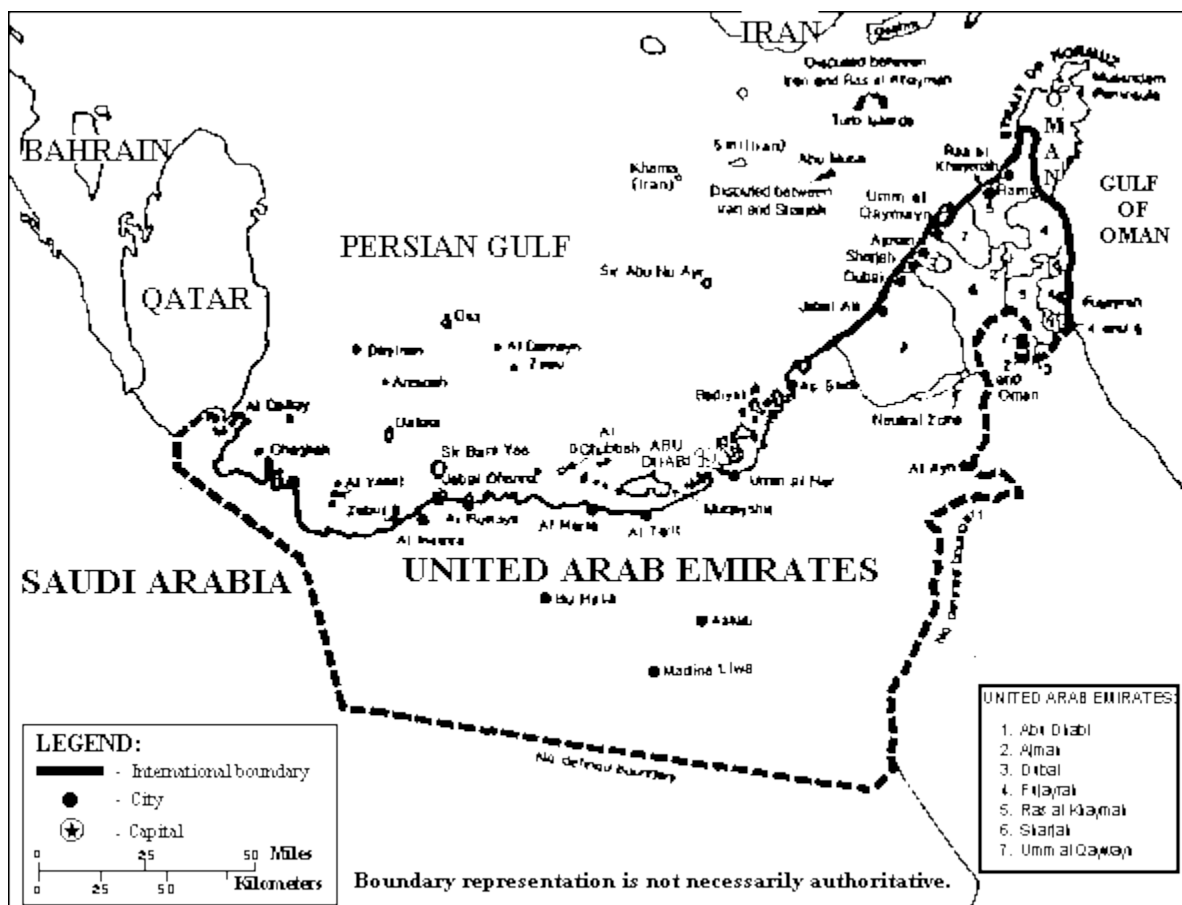


Figure 2-48. United Arab Emirates.

An 1892 agreement with six of the Trucial Coast sheikdoms granted Britain exclusive responsibility for the defense and foreign affairs of the sheikdoms. This agreement continued in effect until the British withdrew from the area in 1968. The British attempted to leave behind a federation of states that included the sheikdoms which now makeup the UAE, Bahrain, and Qatar; but this effort was negated when the latter two states declared their independence as separate entities. Following the Bahraini and Qartari declarations of independence in late 1971, the leaders of the remaining sheikdoms (Abu Dhabi; Ajman; Dubai, Fujayrah, Sharijah, and Ummal Qaywayn) in the Trucial States organized a new grouping called the UAE which was formally constituted as a state in 1971. The seventh sheikdom--Ras al Khaymah--became a member of the UAE in 1972 ([Figure 2-49](#)).

b. Recent history. The UAE were initially faced with the problem of advancing from an isolated and underdeveloped country status to that of a modern country in an affluent society. There was difficulty in creating a centralized UAE federal government over the heads of seven separate absolute rulers. Centralization of all the sheikdoms was further complicated because each continued to develop its own governmental activities. The unification process resembled more of an alliance than a federation. This federation has become more acceptable with time, and progress has been made in unifying a number of key institutions along parallel lines. The current obstacle to full unification is the intense rivalry between the three largest sheikdoms of Abu Dhabi, Dubai, and Ras al Khaymah. Three of the UAE sheikdoms, Abu Dhabi, Dubai, and

Sharjah, produce oil and enjoy economic stability, while the other four sheikdoms, Ajman, Umm al Qaywayn, Ras al Khaymah, and Fujayrah, do not and must rely heavily on the combined UAE federal budget for economic subsidies.

4. Weather.

a. Climate.

(1) The UAE climate is arid with high summer temperatures from May to October (Table 75). In the mountains the temperatures are considerably cooler. Humidity exceeds 85% along the coast during summer and because of this high humidity a dense cloud cover forms in the coastal area most nights. During the late summer months, a humid wind known as the "sharqi" combines with the already humid conditions and makes the coastal region especially unpleasant.

Table 75. Annual temperatures °C.

<u>REGION</u>	<u>WINTER</u>	<u>SUMMER</u>	<u>EXTREMES</u>
	MIN MAX	MIN MAX	MIN MAX
Desert/Lowlands	10° 26°	29° 48°	-4° 54°
Mountains	7° 21°	18° 32°	0° 38°

(2) Despite the high humidity, the average rainfall in the coastal area is less than 13 cm, but in the mountains annual rainfall often reaches 38 cm. Rain in the coastal region falls in short torrential bursts during the summer months, resulting in floods in the dry wadi beds. Droughts are frequent.

b. Light tables. Light tables reflect the average times, by month, for sunrise and sunset ([Table 76](#)). At the times shown, general outlines may be visible but the horizon probably cannot be distinguishable.

Table 76. Light table.

<u>DUBAI, UAE</u>											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>SUNRISE</u>											
0604	0602	0542	0511	0443	0428	0431	0445	0459	0510	0526	0547
<u>SUNSET</u>											
1740	1803	1820	1835	1849	1904	1913	1904	1838	1806	1738	1728

5. Terrain. The UAE has 83,600 km². This figure does not include a number of sandbars and islands of which the largest are Dalma, Al Ghubbah, Abu Musa, Sir Bani Yas, Das, Muqayshit, and Zirku. The land is mostly desert or urban. The country is bordered to the north by the Persian Gulf, to the north and east by Oman and the Gulf of Oman, to the south by Saudi Arabia, and to the northwest corner by Qatar. Boundaries are not clearly defined except for the one with Oman in the north. There have been boundary disputes between the UAE, Saudi Arabia, and Qatar in the past ([Figure 2-49](#)).

a. Terrain features.

(1) The UAE has only two natural regions: the desert and the mountain rim of the northeast. To the south and west of Abu Dhabi the vast rolling sand dunes merge into the Rub al Khali (empty quarter) of Saudi Arabia. Large sections of the Abu Dhabi coast are salt marshes (sabkhat) that extend approximately 10-15 km inland. The terrain consists mostly of dark sand dunes, stony hillocks, and pebbly tracts. This region is bordered on the west by the Sabkhat Matti (salt marsh) that extends southward for 112 km and eventually merges with the vast wastes of the Rub al Khali. The Al Liwa is a series of 30 oases which extend 65 km from east to west and are situated 100 km from the coast and 160 km southwest of Abu Dhabi City. These oases lie in a depression surrounded by sand dunes. Water is available, but at several meters below the surface. To the south of the oasis are the Rub al Khali and Umm as Samim salt flats. Another oasis, Al Buraymi, lies 160 km east of Abu Dhabi City. This oasis also has adequate water available. The rest of the region is desert until it reaches the foothills of the Western Hajar Mountains in the north.

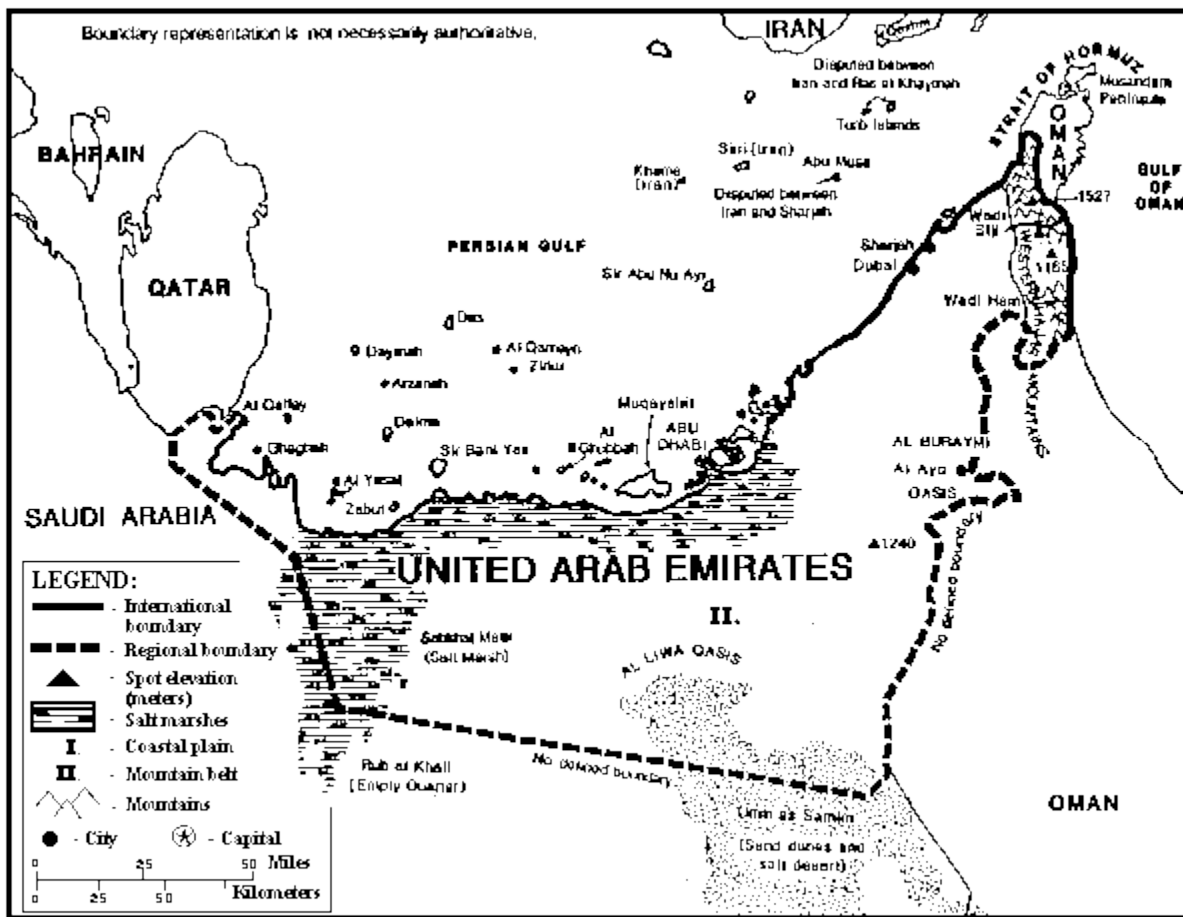


Figure 2-49. Terrain features of the UAE.

(2) The Western Hajar Mountains in the UAE are bordered to the east by the Gulf of Oman and to the west by a flat desert region. The mountains rising in places from 2,200 to 2,400 m, come close to the shore in various locations. Ras al Khaymah, Fujayrah, and the eastern part of Sharjah are hilly or mountainous regions topographically distinct from Abu Dhabi and Dubai, which together account for more than 87% of UAE territory. There is some cultivation along the wadis of Siji and Ham but otherwise the Hajar is barren. In the vicinity of Al Fujayrah, a small coastal plain continues southward into Oman. Trafficability in the UAE is evaluated at [Table 77](#).

Table 77. Trafficability.

<u>REGION</u>	<u>TRACKED VEHICLES</u>	<u>WHEELED VEHICLES</u>	<u>REMARKS</u>
Desert	Mobility is excellent except in areas of salt flats, marshes, and places where the rolling sand dunes are too steep to be trafficable.	Poor to Fair, depending on local surface. Stony areas are good, but deep sand would be almost impassible. Coastal roads are excellent.	See FM 90-3 , Desert Operations.

Western Hajar Mountains	Mobility is good to fair, depending on local conditions. Occasional trails can be used for small unit movement; large scale operations will be hindered by the broken terrain.	Poor to fair, depending on usability of local roads and trails.	See FM 90-3 , Desert Operations.
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b. Urban areas. All the major towns and urban areas of the UAE are located along the coast with the exception of the oases of Al Buraymi and Al Liwa. The major urban areas are the cities of Abu Dhabi, Dubai, and Sharjah. Abu Dhabi, the federal capital, is located on a small flat island connected to the mainland by two bridges. The island is only about 72 km² in area. Dubai is located 161 km to the north of the capital. The city is the acknowledged commercial center of the UAE and also the major port. Both cities have undergone tremendous growth in the last 15 years. Both cities have a high percentage of immigrants.

c. Coasts and beaches. The UAE has 1,488 km of coastline, 695 km on the Persian Gulf and 90 km along the Gulf of Oman. There are also numerous scattered islands in the Persian Gulf. Along the Persian Gulf coast lies an area of extremely shallow seas. The tidal range is approximately 3.5 m between high and low tides. The numerous small islands, reefs, shifting sandbars, strong tides, and occasional windstorms complicate navigation near the shore. The UAE claims 3 nm as the limit of its territorial waters; only the sheikdom of Sharjah claims 12 nm. Sharjah also claims an exclusive economic zone of 200 nm for fishing rights. Coast and beach access to the UAE is evaluated at [Table 78](#).

Table 78. Coast and beach access.

<u>AREA</u>	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
Persian Gulf Coast	The shallow water and extensive sandbars, shoals, and reefs make this a marginally effective area for amphibious operations. The four-lane highway system paralleling the coastline provides a high speed avenue of approach to key areas of the country.	The extensive system of underwater crude-oil pipelines linking the oil fields with the refineries and wellheads off the coast is a critical target.
Gulf of Oman Coast	Narrow beaches overlooked by the Western Hajar Mountains would be usable for small scale operations; larger scale	

operations would necessitate entry through the small ports and harbors in this area (see [Figure 2-50](#)).

6. LOCs. As the UAE's economy has expanded, the country has made tremendous efforts to improve transportation facilities.

- a. Roads. A network of good, hard-surfaced roads connects the seven emirate capitals. Table 79 identifies the road network and main routes. [Figure 2-50](#) locates the roads.
- b. Railroads. There are no railroads in the UAE.
- c. Ports. The UAE has 170 deep-water berths; this is approximately half of the total moorage available in the Persian Gulf area. Still, port facilities are constantly being expanded to accommodate the increasing needs of the UAE. Ship transport is a vital link to the world. The UAE has four major ports and three minor ports. [Table 80](#) provides a list of ports and their capabilities. Seven offshore oil loading terminals are located at Fateh, Mubarek, Abu al Bukhoosh, Arzanah, Zirku Island, Mabarras Island, and Das Island. [Figure 2-51](#) identifies the port locations.

Table 79. Roadways.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>	<u>REMARKS</u>
Abu Dhabi-Jabal Dhanna	262 km	None
Abu Dhabi-Bu Hasa	221 km	None
Abu Dhabi-Muscat (Oman)	470 km	None
Abu Dhabi-Dubai-Sharjah-Ajam-Ras al Khaymah	154 km	Four-lane road
Abu Dhabi-Madina Lwaw	219 km	Two-lane road
Abu Dhabi-Al Ayn	160 km	Transit time 2 hours; three-lane road
Abu Dhabi-Dubai	161 km	Principal route; transit time approximately 2

		hours; four-lane road
Sharjah-Adh Dhayd-Fujayrah	114 km	Four-lane road from Sharjah to Adh Dhayd

Table 80. Ports.

<u>PORTS</u>	<u>TYPE AND CAPABILITIES</u>
Mina Zayed (Abu Dhabi)	Major port; 12 deep-water berths; 6 shallow draft berths; roll-on/roll-off; full provisioning.*
Mina Rasid (Dubai)	Major port; oil terminal; 35 deep-water berths; container and roll-on/roll-off full provisioning.
Jabal Ali	Major port; 66 berths; container and roll-on/roll-off facilities; full provisioning.
Mina Khalid (Sharjah)	Major port; 12 berths; container and roll-on/roll-off full provisioning.
Jabal Dhanna	Minor port; offshore oil facility with 4 oil loading berths; 4 loading berths (dry cargo is lighter off-loaded); limited provisioning.
Minakhor Fakkan	Minor port; 430 m quay, 95 m jetty; provisioning available.
Mina Saqr	Minor port; 7 deep-water berths; container and roll-on/roll-off; full provisioning.
*Includes fuel, fresh water, and food.	

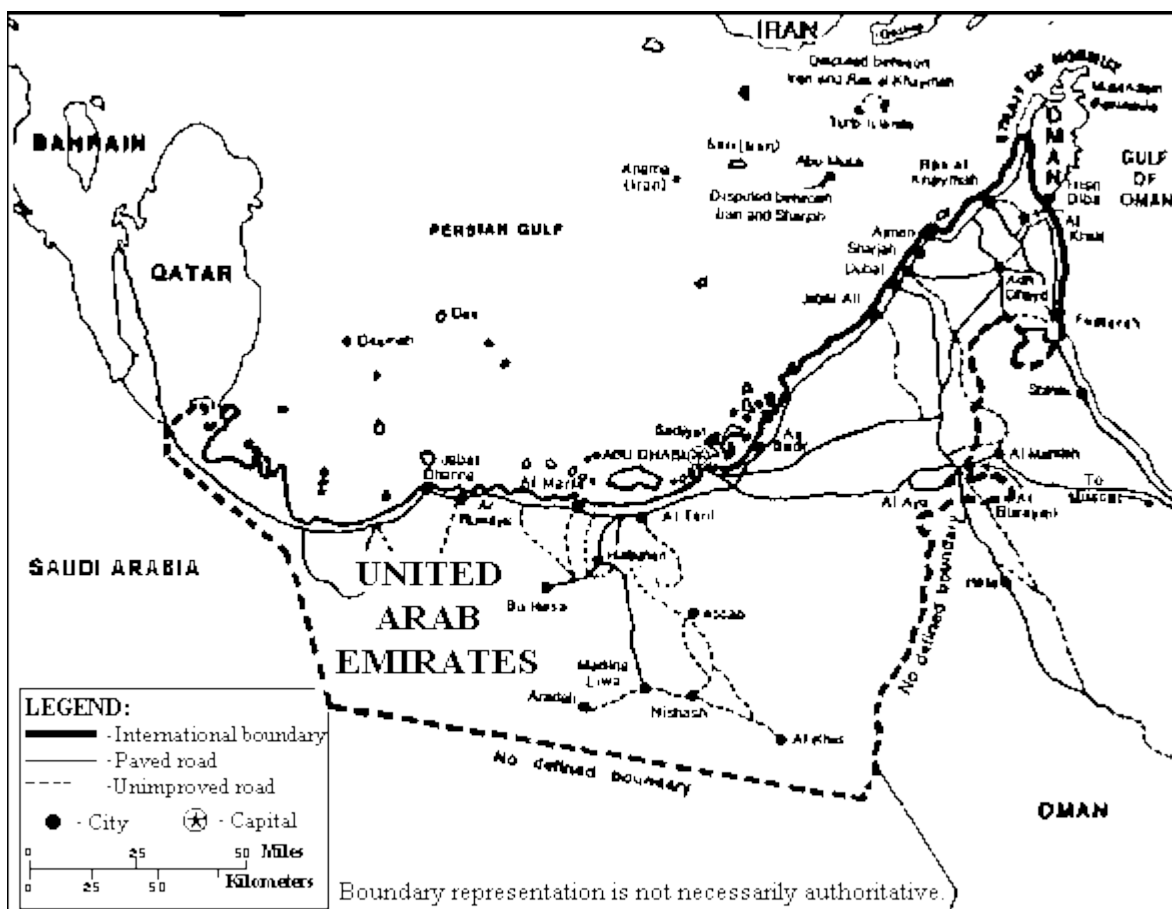


Figure 2-50. Roads of the UAE.

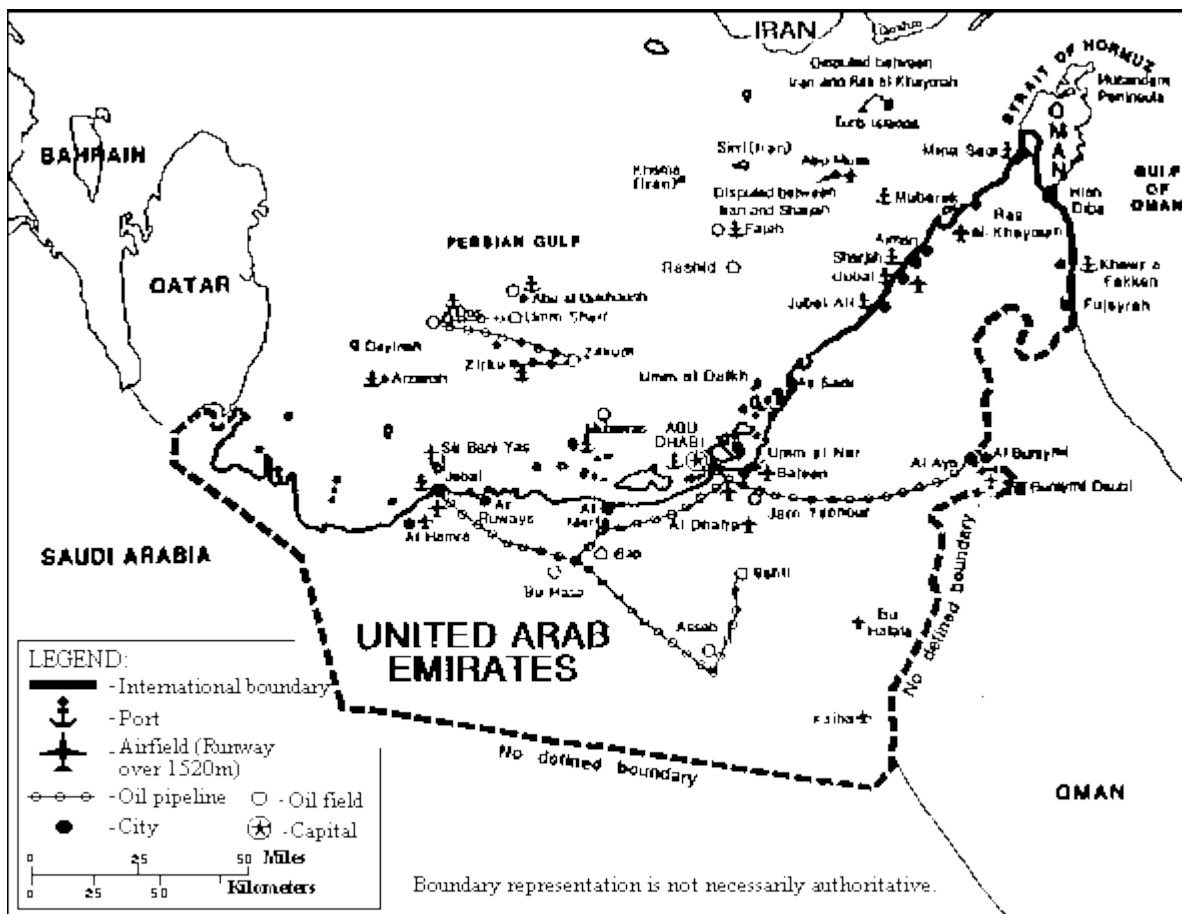


Figure 2-51. Ports, airfields, and pipelines of the UAE.

d. Air transportation. The UAE air transportation network is depicted in [Table 81](#). [Table 82](#) identifies major airfields and [Figure 2-51](#) locates the airfields. The six international airports in the UAE are located at Abu Dhabi, Dubai, Ras al Khaymah, Sharjah, Fujairah and the newest one, Al Ain in Abu Dhabi, which was built at a cost of US\$190 million, and inaugurated in March 1994. Air Intergulf, Emirates Air Services, and Shaheen Helicopter Company handle intergulf flights and domestic travel. Besides these air services, the UAE is also part owner of Gulf Air and Gulf Helicopters.

Table 81. Air transportation network.

<u>AIRFIELDS</u>	<u>38 (35 USABLE)</u>
Runway Type	
Permanent surface	20
Unpaved fields and usable airstrips	11
unusable airstrips	17

Runway Length*

Over 3,660 m	7
2,440-3,660 m	5
1,220-2,439 m	5
Under 1,220 m	18

*Runway lengths are for permanent surface and unpaved usable airfields only.

Table 82. Airfields.

Abu Dhabi International	Civil aviation terminal; 29.5 km ESE of Abu Dhabi; one 4,100 m asphalt runway; sited on open coastal plain; major commercial facility.
Al Dhafra	UAE Air Force facility; 37 km SE of Abu Dhabi; one 3,675 m asphalt runway; sited in hilly area near coastal flats; primary military facility.
Abu Musa Island	Field located on small island in Persian Gulf, 64 km from mainland; one runway and adjacent heliport; Abu Musa Island has been under control of Iran in a border dispute with the UAE.
AL Hamra Auxiliary	Field 202 km WSW of Abu Dhabi; near small military camp; runway length unknown; sited on sandy coastal plain.
Bateen	Primary base and headquarters of UAE Air Force; 12.8 km SE of Abu Dhabi; one 3,200 m asphalt runway; sited at the base of a narrow peninsula; military and civilian helicopter and civilian freight terminal.

Table 82. (concluded).

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
Abu Dhabi International	Civil aviation terminal; 29.5 km ESE of Abu Dhabi; one 4,100 m asphalt runway; sited on open coastal plain; major commercial facility.
Al Dhafra	UAE Air Force facility; 37 km SE of Abu Dhabi; one 3,675 m asphalt runway; sited in hilly area near coastal flats; primary military facility.

Abu Musa Island	Field located on small island in Persian Gulf, 64 km from mainland; one runway and adjacent heliport; Abu Musa Island has been under control of Iran in a border dispute with the UAE.
Al Hamra Auxiliary	Field 202 km WSW of Abu Dhabi; near small military camp; runway length unknown; sited on sandy coastal plain.
Bateen	Primary base and headquarters of UAE Air Force; 12.8 km SE of Abu Dhabi; one 3,200 m asphalt runway; sited at the base of a narrow peninsula; military and civilian helicopter and civilian freight terminal.
Bu Hafafa	Abandoned field; 184 km S of Dubai; one 1,575 m sand runway; sited on irregular terrain of sand and rocky ridges.
Buraymi Daubi	UAE Air Force field; 7.3 km SE of Al Buraymi; one 1,825 m graded earth runway; sited on a level sandy desert area; some domestic airline usage.
Dubai International	Civil aviation terminal; 5.5 km ESE of Dubai; one 4,000 m asphalt/concrete runway; sited on a relatively level coastal plain, major commercial facility.
Faiha	Oil company field; 123 km SW of Al Buraymi; one 1,600 m graded earth runway; sited in rough terrain of dunes and rocky crags.
Fuhairah International	Civil aviation terminal; 1 km from Fuhairah; one 3,750 m asphalt runway, the only international airport on the east coast.
Sharjah	Civil aviation terminal; 20km S of Ras al

	Khaymah; one 3,760 m asphalt runway; site on desert; handles 65% of all UAE sea-air cargo, currently use by 57 airlines for cargo operations.
Jabal Dhanna	Oil company field; 181 km W of Abu Dhabi; one 2,200 m asphalt runway; sited on a narrow sand and gravel area on the Persian Gulf.
Ras al Khaymah International	Civil aviation terminal; 20 km S of Ras al Khaymah; one 3,760 m asphalt runway; sited on a relatively level sandy and rocky desert area; major commercial facility.
Yas Island	UAE Air Force field on island 99 km SSW of Das Island; one 1,800 m asphalt runway on island coastal plain; used for coastal patrol aircraft.
*Runway lengths 1,525 m or longer.	

e. Water transportation. There are no inland waterways or bodies of water in the country.

f. Pipelines. Crude oil is transported by pipeline from the oil fields to tank farms and oil tanker terminals ([Figure 2-51](#)). Underwater pipelines lead from oil fields to storage facilities and shipping terminals on islands scattered throughout the Persian Gulf. The pipeline system consists of 830 km for crude oil and 870 km for natural gas.

7. Military capabilities.

a. Background. Following World War II, Britain assisted the majority of the Trucial States in forming what was then known as the Trucial Oman Levies. Officer ranks were initially filled by the British, and later by Pakistanis (Baluchi) and Arabs from various nations. In 1955 the levies were reorganized as the Trucial Oman Scouts. In 1965 Abu Dhabi and Ras al Khaymah organized separate military elements for their respective sheikdoms. By 1976 the defense force of the Trucial States and the separate elements of Abu Dhabi and Ras al Khaymah formally merged into the armed forces of the UAE.

b. Command structure. The defense structure of the federation is headed by the president, who is the Chairman of the Defense Council. In 1976 the Armed Forces of the UAE were unified under a single central command known as the General Command of the Armed Forces with three military regions--Western, Central, and Northern--all under the supervision/direction of a General Staff Command. For all practical purposes, each of the three major military regional commands retains full operational independence. The line of command runs from the President

as the Supreme Commander through the Deputy Supreme Commander and the Defense Minister to the Chief of Staff ([Figure 2-52](#)).

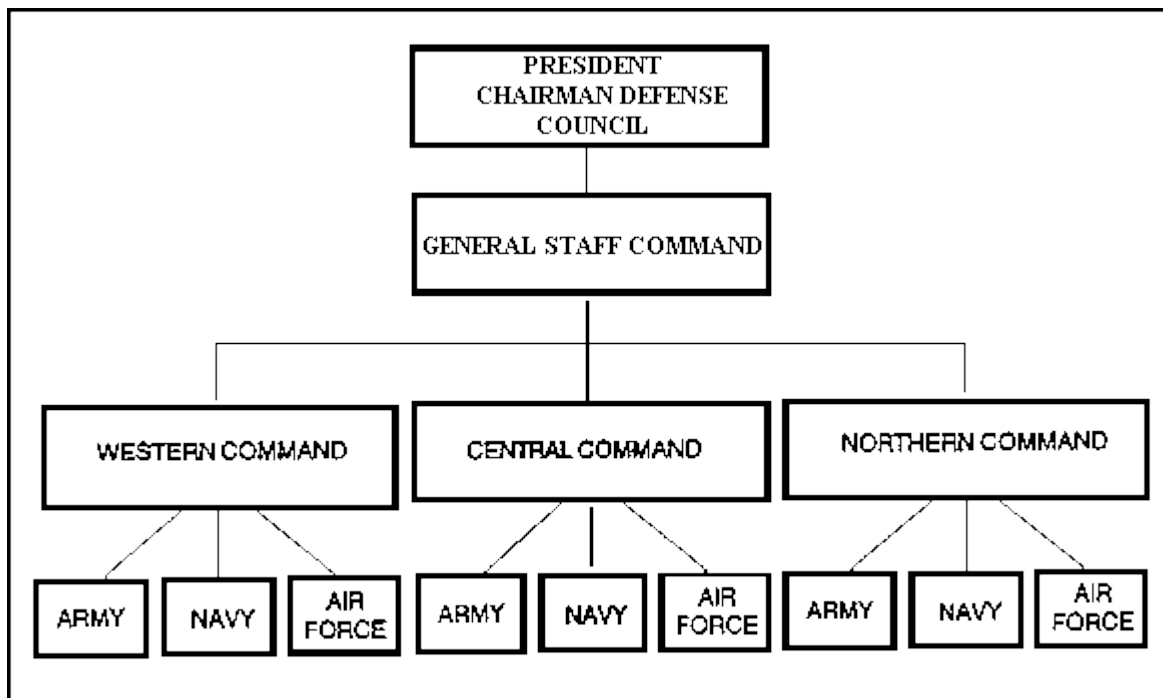


Figure 2-52. UAE Armed Forces command structure.

c. Armed Forces. The mission of the Armed Forces is the classic one of land, air, and sea defense. The Armed Forces consist of an Army, Navy, Air Force (service is voluntary in all branches) and paramilitary. The total strength of the Armed Forces is 70,000 personnel. About 40% of the manpower is provided by local recruitment, 30% from Oman, and the remainder from India, Pakistan, and Iran.

d. Army. The total strength of the Army is 40,000 personnel including 6,000 from Dubai. Types of UAE Army units are as listed at [Table 83](#).

Table 83. UAE Army units.

1 x Royal Guard brigade 2 x Armored brigade 2 x Infantry brigades 1 x Mechanized infantry brigade 1 x Artillery brigade with 3 x battalions 1 x Air defense brigade with 3 x battalions 1 x Infantry brigade (not integrated-Dubai)

e. Air Force. The UAE Air Force numbers 4,000 (including 700 from Dubai) and is organized as an air police wing and the central Air Force. Types of UAE Air Force units include 2 x FGA

squadrons, 1 x computer operated instrument (COIN) squadron, 2 x fighter squadron, plus RECCE, EW, and transport aircraft. Furthermore, there are attack and transport helicopters.

f. Navy. The navy numbers 1,500 and has placed emphasis on an accelerated development of its fleet of missile-equipped fast-attack craft (FAC[M]). Ships include 17 x patrol and coastal combatants, and 2x landing craft. Major bases are at Dalma and Mina Zayed (Abu Dhabi); Ajman; Mina Rashid and Mina Jabal (Dubai); Fujairah; Mina Sakr (Rasal Khaimah); Mina Khalid; Khor Fakkan, Taweela (under construction) (Sharjah).

g. Paramilitary forces. These forces consist of a Federal Police Force and the Coast Guard with 28 x inshore patrol craft and about 32 x boats.

h. Foreign forces. These forces consist of 5,000 Moroccan Army, gendarmerie, and police troops.

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PART I: YEMEN

1. General information. Yemen (YEM un) is a republic in the southwestern corner of the Arabian Peninsula. The Red Sea borders Yemen in the west, the Gulf of Aden and the Arabian Sea borders Yemen in the south. Sanaa is Yemen's capital and major city. Aden is its largest port. [Figure 2-54](#) is a country outline of Yemen.

2. Statistical Data.

Name:	Republic of Yemen
Capital:	Sanaa
Population:	13,972,477 (July 1997)
Area:	527,970 km ²
Ethnic divisions:	Mostly Arab; minor representation of Afro-Arab, Indian, Somali, and European groups
Language:	Arabic
Literacy rate:	38% (estimated)
Religion:	Muslim (Sunni and Shiite), some Christian and Hindu
GNP:	\$5.3 billion
Per capital income:	\$545
Unit of currency:	Yemini rial (YR)
Exchange rate:	\$1 = 50.04 YR
Time zone:	Three hours ahead of UTC, eight hours ahead of US Eastern Standard Time; time zone CHARLIE

Defense forces: Army, Air Force, Navy, and paramilitary

Flag ([Figure 2-53](#)):



Figure 2-53. Flag of Yemen.

3. History.

a. Historical background.

(1) From 1200 B.C. to about 500 A.D., the eastern part of Yemen was part of the Minaean, Sabaean, and the Himyarite Kingdoms. Later conquerors included Ethiopians, Persians, Egyptians, and Ottoman Turks.

(5) The Turks left the western part of Yemen in 1918 and the Zaydi Imams began their rule of the entire region. Imam Yahya ruled the country with an iron hand from 1918 until 1948 when he was assassinated in a palace coup supported by tribal factions opposed to his tight control. Ahmad, his son, successfully fought a major campaign to regain control over the warlike tribes and remained in power until his death in 1962. Following Imam Ahmad's death, a group of Nasserist, Baathist, and socialist military officers seized power in a coup. Admad's son, Muhammed al-Badr, escaped and enlisted the aid of northern tribesmen to help him regain power. The civil war that ensued was costly for his supporters who were completely overwhelmed by an Egyptian expeditionary force of 70,000. As many as 200,000 Yemenis died in the civil war.

(6) In 1959 following British suggestions for self-determination, six of the eastern states formed the Federation of Arab Emirates (FAE) of the south. The FAE was later renamed the Federation of South Arabia, which Aden joined in 1963. In that same year several groups agitating for political independence from British rule merged to form the National Front for the Liberation of South Yemen (NLF). Under NLF pressure, Britain was forced to grant full independence to Aden and South Yemen and withdraw from the region in 1967. At this time the People's Democratic Republic of Yemen (PDRY) was formed. Between 1967 and 1976 there were several attempted coups as well as an ongoing purge by the party faction controlling the police force of the state. An estimated 25% of the PDRY population fled the country between 1967 and 1972. As late as 1976 an estimated 300,000 former PDRY citizens were reported to still be in the YAR. About 70,000 of them were in refugee camps; the others had been absorbed into YAR society.

b. Recent history.

(1) Since 1977 unification attempts continued sporadically between the YAR (Sanaa) and the PDRY (Aden). It was doubtful for a long time that progress would result from these efforts, primarily because of the noticeable differences between Sanaa and Aden. Tribal reconciliation has progressed, although one northern tribe, the Hashids, were at odds with the central government. However, in May 1990 the people of the YAR and PDRY formed the Republic of Yemen.

(2) Prior to the recent Gulf War, Yemen abstained from an Arab League solution to condemn Iraq. Yemini and Saudi Arabian troops were facing each other during the Gulf War, but it did not come to any clashes.

4. Weather.

a. Climate.

(1) The climate of the Tihamat ash Sham coastal plain in the west is semiarid with hot temperatures (Table 84); humidity ranges from 50 to 70%. The average annual rainfall of 13 cm comes in irregular and heavy torrents. There is little variation in the average monthly temperatures, and dew formation as a result of the high humidity is common.

Occasional high winds, usually from the southwest and northwest, cause sandstorms and soil erosion.

Table 84. Annual temperatures °C.

<u>REGION</u>	<u>WINTER</u>	<u>SUMMER</u>	<u>EXTREMES</u>
	MIN MAX	MIN MAX	MIN MAX
Western Mountains	6° 21°	15° 29°	1° 38°
Tihamat Coastal Plains	18° 29°	26° 38°	8° 54°
Red Sea Coastal Region	20° 27°	26° 40°	15° 54°
Eastern Mountains Interior	0° 15°	13° 29°	-3° 35°
North/Steppe Zone	12° 30°	22° 40°	-7° 54°

(2) In the interior foothills, highlands, and plateaus of the western part, there are two major rainfall periods, one from March to May and the other from July to September. The amount of rainfall varies considerably with the altitude, but in general precipitation becomes heavier in the southern sector. As much as 90 cm of rain falls yearly in the highest regions permitting agriculture without irrigation. Rainfall averaging 38 to 51 cm is common in the lower foothills. Snow and frost occur in the winter at high altitudes. Rainfall is abundant and unpredictable, causing several flash floods in the wadis. Days are usually clear and sunny except for the rainy periods of the year. The highlands enjoy a temperate summer and a cool, dry winter.

(3) Temperatures are high throughout the eastern part of the country, particularly in the coastal region ([Table 84](#)). The summers run from April to October and are especially hot and humid. Some relief is afforded by the monsoons that occur in July and September. Rainfall is limited. Aden, as an example, has an average annual rainfall of only 13 cm.

(4) The mountainous interior region of the eastern part is relatively cold as compared to the rest of the country. The higher regions of the mountains receive from 51 to 76 cm of rainfall annually. The absence of rain from five years or more in the norther and eastern sections of the country is not uncommon.

(5) The climate of the Wadi Hadramaut (meaning "death is present") in the central part of eastern Yemen is arid and hot. The humidity ranges from 35% in June to 64% in January. During April and May severe dust storms frequently cause crop damage. During April, July, August, and September, short heavy showers fall unpredictably, producing an average of 5 cm of precipitation a year.

b. Light tables. Light tables reflect the average times, by month, for sunrise and sunset ([Table 85](#)). At the times shown, general outlines may be visible but the horizon probably is not easily distinguishable.

Table 85. Light table.

<u>DUBAI, UAE</u>											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>SUNRISE</u>											
0622	0626	0616	0557	0540	0533	0537	0545	0549	0549	0553	0606
<u>SUNSET</u>											
1745	1801	1809	1811	1815	1822	1830	1827	1811	1750	1734	1732
<u>LATITUDE OF CAIRO</u>											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<u>SUNRISE</u>											
0630	0633	0621	0559	0540	0531	0536	0545	0550	0553	0559	0614
<u>SUNSET</u>											
1743	1801	1811	1816	1821	1830	1838	1834	1816	1753	1734	1730

5. Terrain. The Republic of Yemen occupies the southwestern corner of the Arabian Peninsula. In addition, the Republic of Yemen possesses Socotra Island in the Gulf of Aden, Perim Island in the Straits of Bab al Mandeb Strait, and the islands of Hanish al Kabir, Jabal Zugar, Al Hudaydah, and Kamaran in the Red Sea. The Red Sea borders Yemen in the west, Saudi Arabia with an undefined border in the north, Oman in the east, and the Arabian Sea and the Gulf of Aden in the south ([Figure 2-55](#)).

a. Terrain features.

(1) The country can be divided into two regions--the coastal area and the mountainous interior. The Tihumat ash Sham coastal plains in the west and the coastal area in the south are flat and sandy and varies from 8 to 12 km in width. Farther inland the country

Table 86. Trafficability.

<u>REGION</u>	<u>TRACKED VEHICLES</u>	<u>WHEELED VEHICLES</u>	<u>REMARKS</u>
Tihamat ash Sham coastal plains	Good trafficability with some compartmentation due to the wadis running across the plain to the sea. Some irrigated areas are compartmented by irrigation ditches and canals.	Generally good; local roads will take moderate traffic.	
Western mountain interior	Fair mobility on the lower slopes and on the agriculturally developed upper slopes; poor to impassable in the higher regions. The eastern slopes are gentle; inland valleys are wide and flat and provide excellent terrain for maneuver. Western slopes are broken and drop abruptly to the coastal plain.	Good mobility except on the upper slopes. Roads through the mountains are narrow and winding.	
Southern coastal plain	Good trafficability with some degree of compartmentation due to wadis crossing to the sea.	Fair trafficability with some variation depending on local surface. Local roads are poor.	Area around Aden is more highly developed.
Eastern Mountains	Fair to poor trafficability with extreme variations and compartmentation due to wadis, mountain valleys, and the overall rugged terrain.	Poor to impassable, depending on the local road and trail network.	

Upper Hadramaut	Fair to excellent trafficability on this rolling inland valley.	Fair cross-country movement potential, otherwise dependent on local road system.
Lower Hadramaut	Poor to impassable in this region of deep narrow gorges and winding mountain roads.	Poor to impassable.

b. Urban areas. Yemen's capital and principal city of Sanaa is over 2,100 m above sea level and is located in the western part of the country. The city is situated in a broad valley between mountains that rise to 3,600 m. Access is complicated by narrow, twisting streets within the city and unpaved roads which become muddy during the rainy seasons. Taizz, at 1,402 m above sea level, is a principal city in the southwestern part of the country. Al Hudaydah, at the center of the Red Sea coastal strip, is a major port. Aden is the largest port. The secondary urban areas of Al Mukalla and Sayhut are located along the coastal region in the east ([Figure 2-55](#)).

c. Coasts and beaches. The Republic of Yemen has 1,906 km of coastline and claims 12 nm as the limit of its territorial waters, with an additional 6 nm as a necessary supervision zone. An evaluation of coast and beach access is shown in [Table 87](#), ports are shown in [Figure 2-56](#).

Table 87. Coast and beach access.

<u>AREA</u>	<u>CHARACTERISTICS</u>	<u>REMARKS</u>
Tihamat coastal plain	This area is generally suitable for amphibious operations with many low beaches rising from the Red Sea. Access to the area is restricted by the Straits of Bab al Mandeb and the Suez Canal. The poorly developed internal road network could hinder deployment. The coastal area in general is remote from critical areas of the country.	The ports of Al Hudaydah, Salif, and Mocha provide the most direct access to the interior road network, as do Qizan in Saudi Arabia and the Bay of Turbak, both CIS naval bases. Kamaran Island, off Salif, is also Yemen territory.
Eastern coast	The coastline is generally suitable for amphibious operations but the area is too remote from key regions of the country to be of tactical or strategic importance.	None
Aden Area	The wide beaches and natural	CIS forces in Aden and

harbor at Aden are suitable for large scale amphibious operations. The deep water offshore allows naval support in all areas.

Socotra Island included both naval and aviation elements.

Bay of Turbak

This natural harbor at the western tip of the country is being developed as a naval facility. It would be suitable for amphibious operations and would be of strategic value due to its position near the straits of Bab al Mandeb.

Both former Soviet Army and naval elements were based in this area until 1990.

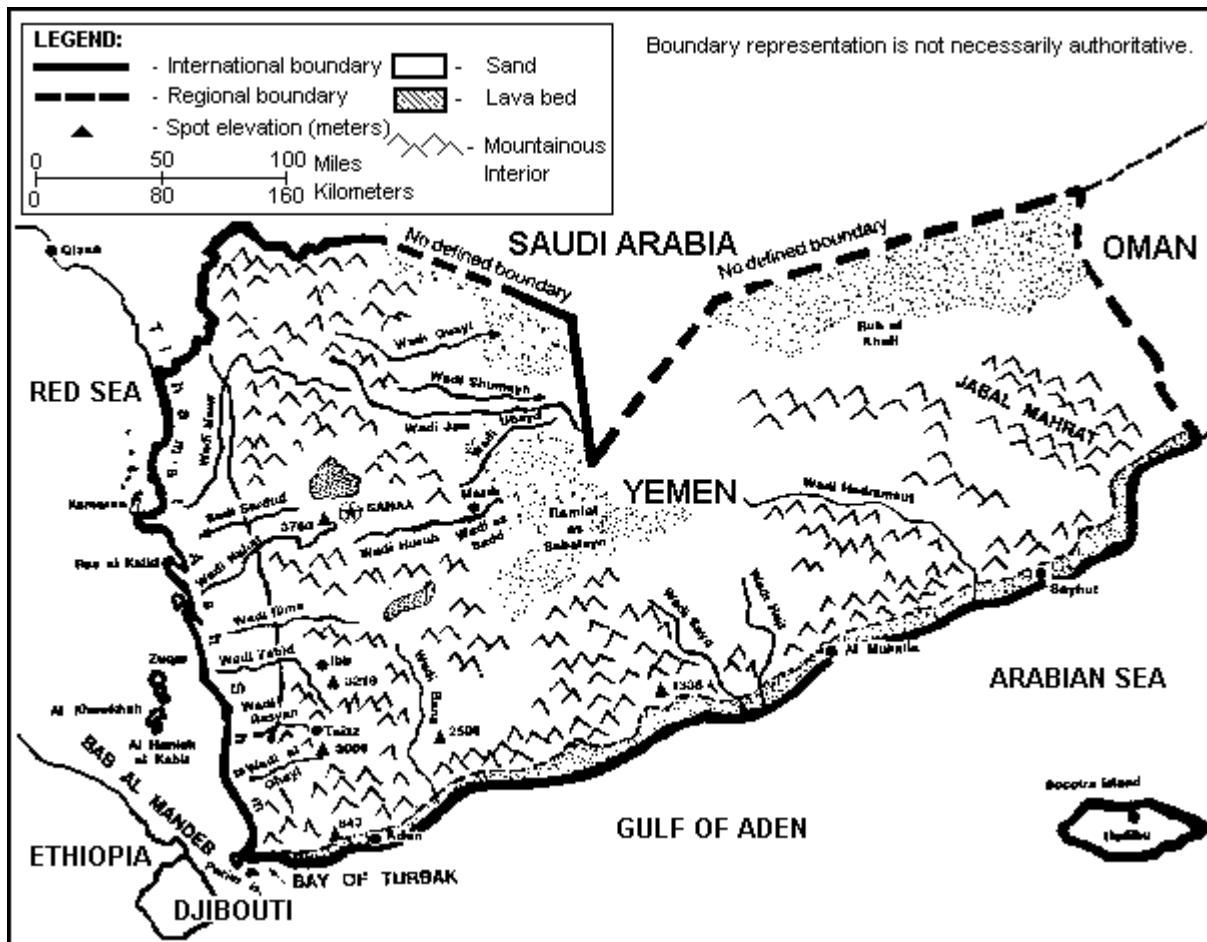


Figure 2-56. Ports, airfields, roads, and pipelines of Yemen.

6. LOCs.

a. Roads. Yemen's road system is the primary means of transportation, but it is not yet sufficient to meet the needs of the country. The first paved road linking Al Hudaydah with Sanaa was completed in 1961. The roads in and around Aden are good. New roads are under construction to link Sanaa to Marib and Dhamar to Lawdar. By 1970 the country's main population centers

and economic areas were linked by some type of road system. Aside from asphalt and dirt roadways, there are also section of cobblestone roads and motorable tracks. These motorable tracks parallel wadi beds wherever possible and become impassable during flash flooding. There is still a lack of feeder roads into some of the agricultural areas, a lack rendering many communities isolated and without access by motorized transport. Inadequate road maintenance has resulted in deteriorated roads. [Table 88](#) identifies the main routes and [Figure 2-56](#) locates the road system.

Table 88. Roadways.

<u>MAIN ROUTES</u>	<u>DISTANCE</u>
Aden-Musaymir-Taizz	160 km
Aden-Shuqra-Lawdar	160 km
Aden-Shuqra-Al Mukalla	535 km
Al Hudaydah-Harad-Qizan (Saudi Arabia)	204 km
Al Hudaydah-Zabid-Mocha	190 km
Al Hudaydah-Zabid-Taizz	205 km
Al Mukalla-Al Qatn-Tarim	273 km
Sanaa-Taizz-Mocha	351 km
Sanna-Sadah-Zahran (Saudi Arabia)	354 km
Taizz-Aden	160 km

b. Railroads. Yemen has no railroad system.

c. Ports. Yemen has six port locations, which are identified in [Table 89](#) and located in [Figure 2-56](#). Aden is the country's main port. There have been tentative plans to develop Salif into another major port, but this will be sometime in the future. Al Hudaydah and Mocha are subject to heavy silting.

Table 89. Ports.

<u>PORTS</u>	<u>TYPE AND CAPABILITIES</u>
Aden	Major port and oil terminal; 20 berths; 244 m of cargo wharf area; oil-dispensing harbor; can accommodate four tankers; roll-on/roll-off; under major expansion; limited provisioning.*
Al Mukalla	Offshore port facility; loading and off-loading by eight barges; no provisioning.
Al Hudayhad	Deep water facility; six berths; one special jetty for tankers; roll-on/roll-off; handles most of western Yemen's cargo; limited provisioning.
Mocha	Minor port; limited to shallow barges; depth 9 m; expansion to include 10 more berths.
Salif	Minor deep water port; bulk wheat and general cargo are handled; 96 m dock and a pontoon berth; lacks infrastructure to support major shipping activities.
Ras al Katid	Minor port; three pontoon berths which can accommodate four ocean-going vessels.
*Includes fuel, fresh water, and food.	

d. Air transportation. [Table 90](#) itemizes the air transportation network. [Table 91](#) identifies the major airfields, and [Figure 2-56](#) locates them. There are five international airports at Khrmaksar (Aden), Rayan, Sanaa, Taizz, and Al Hudayhad. Sanaa handles the bulk of the passenger service. Facilities are considered poor by international standards.

Table 90. Air transportation network.

<u>AIRFIELDS</u>	<u>9 (40 USABLE)</u>
Runway Type	
Permanent surface	10
Unpaved fields and	

usable airstrips	40
unusable airstrips	9
Runway Length*	
2,440-3,660 m	20
1,220-2,439 m	12
Under 1,220 m	8
*Runway lengths are for paved and unpaved usable airfields only.	

Table 91. Airfields.

<u>AIRFIELDS</u>	<u>DESCRIPTION</u>
Abbs	Civil aviation field; 135 km N of Al Hudaydah; one 2,000 m gravel runway; sited in a natural valley between hills; used by both commercial and military aircraft.
Aden International	Civil aviation terminal; 5.7 km NNW of Aden; one 2,660 m asphalt runway; two shorter unusable runways; on isthmus connecting Aden Peninsula with mainland; also used by the Yemeni Air Force.
Al Ayn	Civil and local military field; 73 km W of Haynan; one 1,400 m sand runway; sited on level sand and gravel areas between rock hills rising to 1,250 m and sand dunes.
Al Anab	Forty-six km NW of Aden; one 3,350 m (estimate) runway; sited on level ground; 16 km south of mountains.
Al Bayda	Military field; 21 km NW of Al Bayda town; one 1,525 m gravel runway; sited in mountainous area; occasional commercial aircraft use; new runway planned.
Al Bayda SW	Military field; 3 km SW of Al Bayda town; one 1,400 m

	gravel runway; sited in mountainous area; used to support local military units.
Al Ghayhad	Ministry of Defense field; 2 km SW of Al Ghaydah village; one 2,500 m graded earth runway; sited on a coastal desert of stones and sand.
Al Hazm	Civil aviation field; 5 km N of Al Hazm town; one 1,525 m sand runway; sited in hilly area; used by both civil and military aircraft.
Al Mafraq	Military field; 7 km SW of Uraysh; one 1,220 m graded earth runway; sited in mountainous terrain with hazardous approaches; supports adjacent armored brigade.
Al Hudaydah	Government field; 6 km SSE of Al Hudaydah; two 3,000 m asphalt runways; one of which is in poor condition and is unusable; sited on generally level terrain; former YAR Air Force facility built in 1963; new runway added in 1979.
Ataq	Government field; .8 km N of Ataq village; three runways, one 2,675 m; sited in a valley surrounded by a plateau with limestone outcrops.
Beihaan	Civil aviation field; 1.6 km S of Bayhan al Qisab village; one 1,700 m asphalt runway; sited in a wadi bed with rugged hills in all directions within five miles; field is subject to flooding.
Drilco Two	Government field; 58 km S of Sanaw; one runway; estimated over 1,220 m; sited in desert area.
Freddies Field*	Civil and government field; 6 k, NW of Al Haq village; one 765 m earth runway; sited on the side of a wadi, in sandy terrain surrounded by hilly country.
Haura	Civil aviation field; 2 km SW of Haura village; one 2,050 m sand runway; sited in the bottom of a river bed with

	mountain walls rising 600 m on the E and W; subject to flooding.
Jabal Shubut	Military field; 14 km N of Sarif; one 1,880 m and one 1,825 m sand runway; sited on a sandy gravel plateau.
Kamaran Island	Civil aviation field; on east side of Kamaran Island; one 1,820 m and one 1,720 m gravel runways; occasionally floods during thunderstorms.
Lawdar	Former Ministry of Defense field; .8 km W of Lawdar; one 1,450 m gravel runway; sited in a valley surrounded by high hills; army camp at field; former RAF base.
Marib	Civil aviation field; 64 km NW of Marib; one 2,100 m runway; sited on high level land; used by Yemen Airways.
Mayfaah	Civil aviation field; 4.6 km NW of Mayfaah village; one 1,250 m sand runway; sited on rolling terrain.
Mukayris	Army field; 2 km WSW of Mukayris; one 1,720 m macadam runway in poor condition; sited on a plateau.
Ras Karma	Military airfield on Socotra Island; one 2,900 m graded earth runway; sited on shelving sandy beach; Arabian Sea just north of field.
Rayan	Civil aviation field; .8 km W of Rayan; 20 km NE of Al Mukalla; one 3,050 m, one 1,830 m, and one 1,030 m gravel runway; sited on coastal plain; former strategic airbase.
Rayan New	Commercial airline base; 27 km NE of Al Mukalla; one 2,950 m asphalt runway; sited on coastal plain; operating base of Alyemda Airlines; alternate local and international airport for Aden.
Sadah	New Government field; 4 km NW of Sadah; one 3,660 m

	runway (estimated); sited in mountainous terrain.
Sanaa International	Civil aviation terminal; 9 km N of Sanaa; one 3,250 m asphalt runway; sited in a small valley with hills on either side; used by international and domestic aircraft, as well as Air Force elements.
Sanaw	Civil aviation field; 17 km NNW of Sanaw village; one 1,700 m gravel runway; sited on rolling terrain.
Sayma	New airfield under construction; 9 km from Red Sea; 84 km SW of Taizz; one 1,500 m gravel runway; sited on sloping hillside with high mountain peak to east; planned usage is unknown.
Sayun	Government controlled field; 2.4 km NE of Sayun City; one 2,400 m gravel runway; sited on low sandy area.
Sheik Othman	Civil aviation field; 12.6 km NNW of Aden; one 2,500 m sand runway in fair condition; one 1,600 m sand runway in poor condition; sited in arid sandy terrain; former RAF base, now deteriorated.
Thamud	Civil aviation field; 12.6 km NNW of Thamud Fort; one 1,825 m sand runway; sited in a flat sand basin.
Thamud Fort	Civil aviation field; 8 km S of Thamud Fort; one 1,825 m sand runway; sited on a relatively level sandy area with a wadi running parallel to the west.
Taizz/Ganad	Joint civil/military field; 18 km NE of Taizz; one 3,000 m and one 1,500 m asphalt runways; the shorter being unusable; sited in a valley between low mountains; used by civil and military aircraft.
Uqlah	Civil aviation field; 13.2 km NW of Maywan; one 1,375 m gravel runway; sited on rolling sand and gravel terrain; also used by military aircraft.

Wadi Jawr	Former civil aviation field; 8.2 km SE of Baraqish village; runway dimensions unknown, previously abandoned, but now reported usable.
Zamakh	Civil aviation field; 1.6 km W of Zamakh village and fort; one 1,825 m gravel runway; sited in flat open area; surface travel in this area is almost impossible by other than pack animal.

e. Water transportation. There are no inland waterways in Yemen.

f. Pipelines. Modest oil discoveries were recently made east of Marib and north of Shabwah. Consequently, pipelines were constructed from Marib to Salif at the Red Sea, and from Shadwah to Hisnan Hushaymah at the Gulf of Aden ([Figure 2-56](#)).

7. Military capabilities.

NOTE: The Republic of Yemen was formed in May 1990. Thus far, there is little information available on the joint military organization; therefore, we are showing the two former armies of the YAR and PDRY separately.

a. Background.

(1) The YAR Armed Forces were formed in 1948 under the direction of the imam who ruled the country at that time. The military forces were used to quell tribal disputes while providing protection for the imam. Following the overthrow of the imam's son in 1962 and the development of a new form of government, a republican army was organized. The civil war of the late 1960s was fought between the republican army of 10,000 and the northern tribal forces backed by Saudi Arabia's financial support. An Egyptian expeditionary force supported the army. Since that time the army had become a traditional rival of certain tribes in the YAR. Unfortunately, the conflict between the ruling Zaydi officers and the Sunni Shafi tribes had adversely affected political efforts to stabilize the country. The Shafis and political leftists continued to support reunion with the PDRY while the Zaydi faction maintained military control of the YAR from the highest to the lowest levels of government.

(2) Upon gaining independence in November 1967, the four existing security forces of South Yemen, numbering about 10,000 men, became the South Yemen Army. Initially, arrangements were made with Great Britain for assistance in developing the new republic's Armed Forces. In February 1968, however, the Aden government dismissed the British officers attached to the Southern Yemen forces. All British-oriented officers were replaced by Yemeni officers who were politically sympathetic to the National Liberation Front (NLF). The government in Aden subsequently turned to the Soviet Union for military aid and advisors. Soviet equipment, training, and influence are clearly dominant in the present-day Yemeni Armed Forces.

b. Command structure. Current information is not available.

c. Armed Forces.

(1) The primary role of the former YAR armed forces was to maintain internal security by defending the central government in Sanaa against internal opposition and external threat. Military service was voluntary for the Air Force and Navy, voluntary and by conscription (three years) for the Army. Total Armed Forces active strength was approximately 53,500 with 22,000 conscripts; there were approximately 40,000 reserves.

(2) The branches of the former PDRY Armed Forces included the Army, Air Force, Navy, and the People's Militia paramilitary force. Service in the PDRY Armed Forces was voluntary and by conscription. Total PDRY Armed Forces active strength was 27,500 with 18,000 conscripts and 45,000 reserves.

d. Army. The total Army strength of the former YAR were 37,000; the PDRY had 24,000 prior to the creation of the Republic of Yemen including 25,000 conscripts for the YAR and 18,000 conscripts for the PDRY. Former army units are listed in [Tables 92](#) (YAR) and [93](#) (PDRY).

Table 92. Former YAR Army units.

3 x Armored brigades (battalion strength)
9 x Infantry brigades
1 x Mechanized brigade
2 x Airborne/commando brigades
1 x SF brigade
1 x Central guard force
5 x Artillery brigades
3 x Air defense (AD) artillery battalions
2 x AD battalions (1 x with SA-2 SAM)

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Table 93. Former PDRY Army units.

1 x Armored brigade
3 x Mechanized brigades (status unknown)
9 x Infantry brigades (some being mechanized)
3 x Artillery brigades
10 x Artillery battalions
1 x SSM brigade with FROG-7 and Scud B

e. Air Force. The total Air Force strength of the former YAR was 1,000 and PDRY was 2,500 prior to the creation of the Republic of Yemen. Former YAR Air Force units included 2 x fighter squadrons, 3 x FGA squadrons, plus transport aircraft and helicopters. Former PDRY Air Force units included 3 x FGA squadrons, 3 x fighter squadrons, 1 x transport squadron, and 1 x helicopter squadron.

f. Navy. The total Navy strength of the former YAR was 500 and PDRY was 1,000. Former YAR Navy included 8 x inshore patrol craft, 3 x minesweepers, and 2 x amphibious landing craft. YAR used Al Hudaydah for its base. The former PDRY Navy included 6 x missile craft, and 5 x amphibious landing craft. Major PDRY bases were at Aden, Al Mulkalla, and Perim Island.

g. Paramilitary forces. Former YAR paramilitary forces were made up of 20,000 tribal levies and 10,000 security forces. Former PDRY paramilitary forces included approximately 15,000 people's militia and 30,000 public security forces.

h. Foreign forces include approximately 300 advisors from Cuba who were assigned to the former PDRY.

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LESSON 2

PRACTICE EXERCISE

Instructions The following items will test your understanding of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, review that part of the lesson which contains the portion involved.

1. How many armored divisions are in the Syrian Army?
 - ☐ A. 2.
 - B. 3.
 - C. 4.
 - D. 5.
2. Which peninsula separates the Persian Gulf from the Gulf of Bahrain?
 - A. Bahrain.
 - B. Qatar.
 - C. Arabian.
 - D. Sinai.
3. Abu Dhabi is a sheikdom of which country?
 - A. Qatar.
 - B. Saudi Arabia.
 - C. Jordan.
 - D. UAE.
4. Which dry southwest wind periodically blows across the barren end of the Island of Bahrain?
 - A. Barra.
 - B. Sharqi.
 - C. Qaws.
 - D. Gharbi.

5. What is the capital of Lebanon?
- A. Beirut.
 - B. Doha.
 - C. Muscat.
 - D. Sanaa.
 - E. Aden.
6. Which other defense forces exist in Oman besides the Army, Air Force, and Navy?
- A. Tribal forces.
 - B. Revolutionary guards.
 - C. Royal household.
 - D. Coast Guard.
7. Which rank and country is represented by an individual wearing the insignia in Figure 2-57?
- A. Major (Air Force), Bahrain.
 - B. Captain (Army), Oman.
 - C. Lieutenant Colonel (Air Force), UAE.
 - D. Commander (Navy), Lebanon.

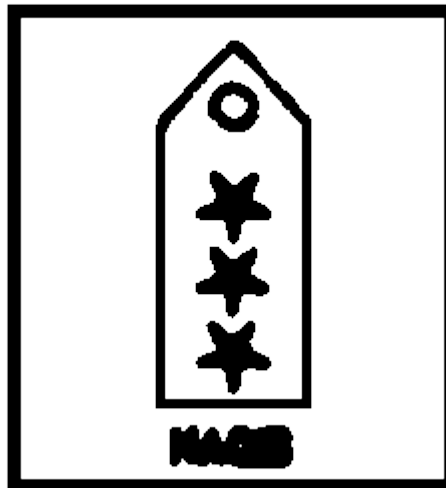


Figure 2-57.

APPENDIX A

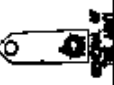

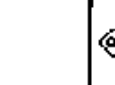

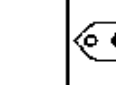

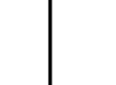
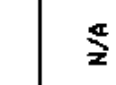

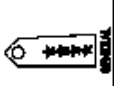
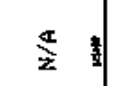
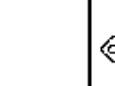


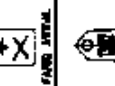

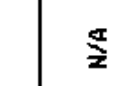


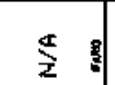

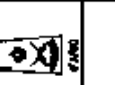

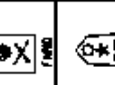

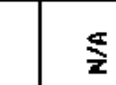

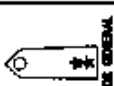
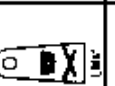
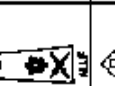
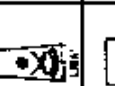

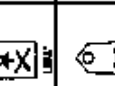
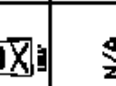
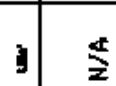

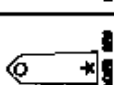
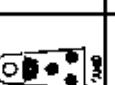
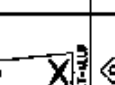



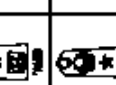
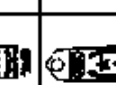
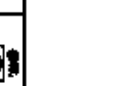
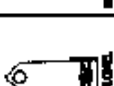

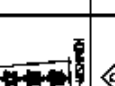
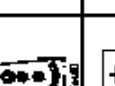


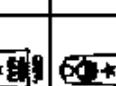
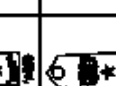






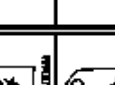
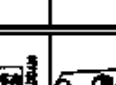
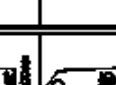


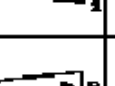
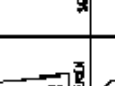
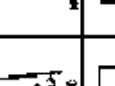

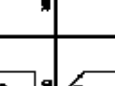
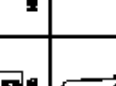
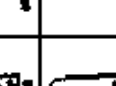


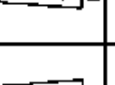
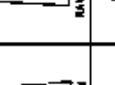
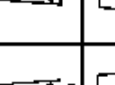
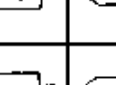
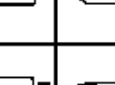
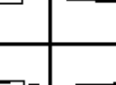
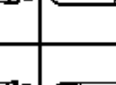

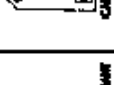

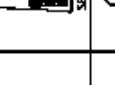
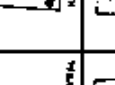


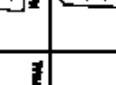
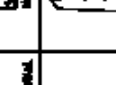
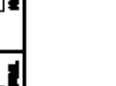
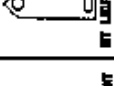

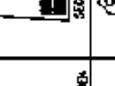

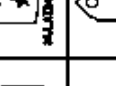

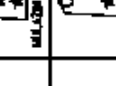
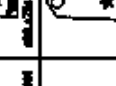

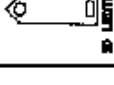


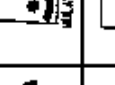
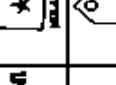

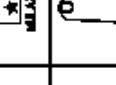
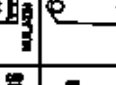



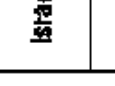






ACRONYMS AND ABBREVIATIONS

AA	Antiaircraft
A.D.	Anno Domini
AMAL	Lebanese Resistance Detachments
ASRY	Arab Shipbuilding and Repair Yards'
ASW	Antisubmarine warfare
BC	before Christ
BD	Bahraini dinar
CAL	Cargo AirLine
C	centigrade
CIS	Commonwealth of Independent States (former USSR)
cm	centimeters
COIN	Computer Operated Instrument
DFLP	Democratic Front for the Liberation of Palestine
DLF	Dhofar Liberation Front
E	degrees
EW	Electronic Warfare
FAC[M]	fast-attack aircraft
FAE	Federation of Arab Emirates
FGA	fighter ground attack
FRC	Fatah Revolutionary Council
GNP	gross national product
HQ	Headquarters
IPC	International crude oil pipeline
IDF	Israel Defense Force
IISS	International Institute for Strategic Studies
IPC	Iraq Petroleum Company
JD	Jordanian dinar
km ²	square kilometers
LOCs	lines of communications
LP	Lebanese pound
max	maximum
m	meters

min	minimum
nm	nautical mile
OAPEC	Organization of Arab Petroleum Exporting Countries
OPEC	Organization of Petroleum Exporting Countries
OR	Omani rial
PDRY	People's Democratic Republic of Yemen
PFLP(GC)	Popular Front for Liberation of Palestine (General Command)
PLA	Palestine Liberation Army
PLF	Palestine Liberation Front
PLFO	Popular Front for the Liberation of Oman
PLO	Palestinian Liberation Organization
PSF	Popular Struggle Front
PSP	Progressive Socialist Party
QR	Qatar rial
RAF	Royal Air Force
SAF	Sultan's Armed Forces
SAM	Surface-to-air missile
SF	Special Forces
SLA	South Lebanese Army
SSM	Surface-to-surface missile
TAPline	Trans-Arabian Pipeline
TMA	Trans-Mediterranean Airway
UAE	United Arab Emirates
UAR	United Arab Republic
UN	United Nations
UNDOF	United Nations Disengagement Observation Forces
UNEF	United Nations Emergency Force
UNIFIL	United Nation Interim Force in Lebanon
YR	Yemini rial
YAR	Yemen Arab Republic

APPENDIX B

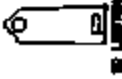
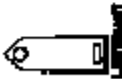
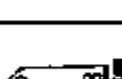
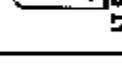
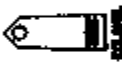
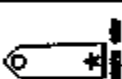
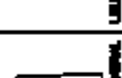
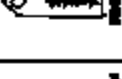



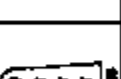
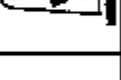


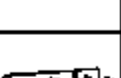
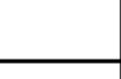




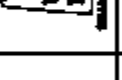


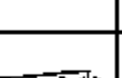
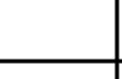




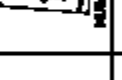


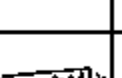
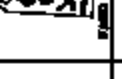




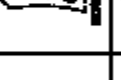


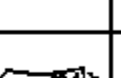
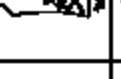




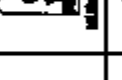


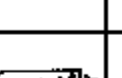




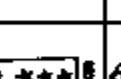

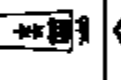

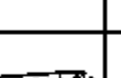
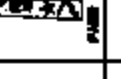



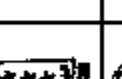



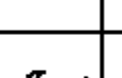
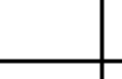








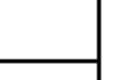
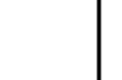
MILITARY RANK INSIGNIA RECOGNITION ARMY

NOTE: Information on Qatar is not available (INA)
















MILITARY RANK INSIGNIA RECOGNITION

AIR FORCE











United States									
Bahrain									
Israel									
Jordan									
Lebanon									
Oman									
Syria									
United Arab Emirates									
Yemen Arab Republic									

ENLISTED RANKS AND U.S. EQUIVALENTS BAHRAIN















ARMY

 JUNIOR ARMY		 ARMY		 MAJOR		 SENIOR ARMY				
 PRIVATE	 PRIVATE FIRST CLASS	 CORPORAL	 SERGEANT	 STAFF SERGEANT	 SERGEANT FIRST CLASS	 MASTER SERGEANT	 FIRST SERGEANT	 SERGEANT MAJOR	 COMMAND SERGEANT MAJOR	 SERGEANT MAJOR OF THE ARMY

NAVY

NO INFORMATION AVAILABLE									
 SEAMAN APPRENTICE	 SEAMAN	 PETTY OFFICER 3RD CLASS	 PETTY OFFICER 2ND CLASS	 PETTY OFFICER 1ST CLASS	 CHIEF PETTY OFFICER	 BOATSWAIN	 GUNNER	 ELECTRICIAN	 MACHINIST

AIR FORCE

 JUNIOR AIRMAN		 AIRMAN		 MAJOR		 SENIOR AIRMAN			
 AIRMAN	 AIRMAN FIRST CLASS	 SENIOR AIRMAN	 SERGEANT	 STAFF SERGEANT	 TECHNICAL SERGEANT	 MASTER SERGEANT	 SENIOR MASTER SERGEANT	 CHIEF MASTER SERGEANT	 CHIEF MASTER SERGEANT OF THE AIR FORCE

ENLISTED RANKS and U.S. EQUIVALENTS ISRAEL

ARMY

TURAI-RISHON	RAY-TURAI	SAMAL	SHAM-RISHON	RAY-SAMAL	RAY-SAMAL RISHON
PRIVATE	PRIVATE FIRST CLASS	CORPORAL	SERGEANT	STAFF SERGEANT	SERGEANT FIRST CLASS
MASTER SERGEANT	FIRST SERGEANT	SERGEANT MAJOR	COMMAND SERGEANT MAJOR	SERGEANT MAJOR OF THE ARMY	

NAVY

















TURAI-RISHON	RAY-TURAI	SAMAL	SHAM-RISHON	RAY-SAMAL	RAY-SAMAL RISHON
SEAMAN APPRENTICE	SEAMAN	PETTY OFFICER 2ND CLASS	PETTY OFFICER 2ND CLASS	PETTY OFFICER 1ST CLASS	CHIEF PETTY OFFICER
SENIOR CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER

AIR FORCE
















TURAI-RISHON	RAY-TURAI	SAMAL	SHAM-RISHON	RAY-SAMAL	RAY-SAMAL RISHON
AIRMAN	AIRMAN FIRST CLASS	SENIOR AIRMAN	SERGEANT	TECHNICAL SERGEANT	MASTER SERGEANT
SENIOR MASTER SERGEANT	CHIEF MASTER SERGEANT	CHIEF MASTER SERGEANT	CHIEF MASTER SERGEANT	CHIEF MASTER SERGEANT	CHIEF MASTER SERGEANT

ENLISTED RANKS AND U.S. EQUIVALENTS JORDAN
















ARMY

 WAKIL JANB		 JANB		 RAGIB		 RAGIB JANB AL		 WAKIL		
 PRIVATE	 PRIVATE FIRST CLASS	 CORPORAL	 SERGEANT	 STAFF SERGEANT	 SERGEANT FIRST CLASS	 MASTER SERGEANT	 FIRST SERGEANT	 SERGEANT MAJOR	 COMMAND SERGEANT MAJOR	 SERGEANT MAJOR OF THE ARMY

NAVY



















 JUNIOR ANWAL		 JANB		 RAGIB		 RAGIB ANWAL		 WAKIL	
 SEAMAN APPRENTICE	 SEAMAN	 PETTY OFFICER 2ND CLASS	 PETTY OFFICER 2ND CLASS	 PETTY OFFICER 1ST CLASS	 CHIEF PETTY OFFICER	 SENIOR CHIEF PETTY OFFICER	 MASTER CHIEF PETTY OFFICER	 MASTER CHIEF PETTY OFFICER	 MASTER CHIEF PETTY OFFICER

AIR FORCE











 JUNIOR ANWAL		 JANB		 RAGIB		 RAGIB ANWAL		 WAKIL	
 AIRMAN	 AIRMAN FIRST CLASS	 SENIOR AIRMAN	 SERGEANT	 STAFF SERGEANT	 TECHNICAL SERGEANT	 MASTER SERGEANT	 SENIOR MASTER SERGEANT	 CHIEF MASTER SERGEANT	 CHIEF MASTER SERGEANT OF THE AIR FORCE

ENLISTED RANKS AND U.S. EQUIVALENTS LEBANON


















ARMY

ARMY										
 JUNIOR AIRMAN		 AIRMAN	 AIRMAN	 AIRMAN	 AIRMAN	 MUSICIAN	 MUSICIAN			
 PRIVATE	 PRIVATE FIRST CLASS	 CORPORAL	 SERGEANT	 STAFF SERGEANT	 SERGEANT FIRST CLASS	 MASTER SERGEANT	 FIRST SERGEANT	 SERGEANT MAJOR	 COMMAND SERGEANT MAJOR	 SERGEANT MAJOR OF THE ARMY

NAVY


















JUNIOR AIRMAN		AIRMAN	AIRMAN AIRMAN	AIRMAN AIRMAN		AIRMAN AIRMAN				
										
SEAMAN APPRENTICE	SEAMAN	PETTY OFFICER 3RD CLASS	PETTY OFFICER 2ND CLASS	PETTY OFFICER 1ST CLASS	CHIEF PETTY OFFICER	SENIOR CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER	CHIEF PETTY OFFICER	SENIOR CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER

AIR FORCE















AIR FORCE									
									
JUNIOR AIRMAN	AIRMAN		AIRMAN	AIRMAN	AIRMAN	MASTER	MASTER		
									
AIRMAN	AIRMAN FIRST CLASS	SENIOR AIRMAN		SERGEANT	STAFF SERGEANT	TECHNICAL SERGEANT	MASTER SERGEANT	SENIOR MASTER SERGEANT	CHIEF MASTER SERGEANT
									
CHIEF MASTER SERGEANT OF THE AIR FORCE									

ENLISTED RANKS AND U.S. EQUIVALENTS OMAN

















ARMY

 NAYAB		 JANY	 RADD	 RADD AGHAL	 WAMIL		 WAMIL HAKEBA			
 PRIVATE	 PRIVATE FIRST CLASS	 CORPORAL	 SERGEANT	 STAFF SERGEANT	 SERGEANT FIRST CLASS	 MASTER SERGEANT	 FIRST SERGEANT	 SERGEANT MAJOR	 COMMAND SERGEANT MAJOR	 SERGEANT MAJOR OF THE ARMY

NAVY



















 NAYAB	 JANY	 RADD	 RADD AGHAL	 WAMIL THANI					
 SEAMAN APPRENTICE	 SEAMAN	 PETTY OFFICER 3RD CLASS	 PETTY OFFICER 2ND CLASS	 PETTY OFFICER 1ST CLASS	 CHIEF PETTY OFFICER	 SENIOR CHIEF PETTY OFFICER	 MASTER CHIEF PETTY OFFICER	 FLEET FORCE MASTER CHIEF PETTY OFFICER	 MASTER CHIEF PETTY OFFICER OF THE NAVY

AIR FORCE


















 NAYAB		 JANY		 RADD		 RADD AGHAL		 WAMIL		 WAMIL AGHAL	
 AIRMAN	 AIRMAN FIRST CLASS	 SENIOR AIRMAN	 SERGEANT	 STAFF SERGEANT	 TECHNICAL SERGEANT	 MASTER SERGEANT	 SENIOR MASTER SERGEANT	 CHIEF MASTER SERGEANT	 CHIEF MASTER SERGEANT OF THE AIR FORCE		

ENLISTED RANKS AND U.S. EQUIVALENTS SYRIA

















ARMY

										
JUNIOR ARMY		ARMY	ARMY	ARMY		MUSATO	MUSATO THAM	MUSATO ARMY		
										
PRIVATE	PRIVATE FIRST CLASS	CORPORAL	SERGEANT	STAFF SERGEANT	SERGEANT FIRST CLASS	MASTER SERGEANT	FIRST SERGEANT	SERGEANT MAJOR	COMMAND SERGEANT MAJOR	SERGEANT MAJOR OF THE ARMY

NAVY

									
JUNIOR NAVAL	NAVY	NAVE	NAVE NAVAL	MUSATO	MUSATO THAM	MUSATO ARMY			
									
SEAMAN APPRENTICE	SEAMAN	PETTY OFFICER 3RD CLASS	PETTY OFFICER 2ND CLASS	PETTY OFFICER 1ST CLASS	CHIEF PETTY OFFICER	SENIOR CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER	ALTERNATE MASTER CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER OF THE NAVY

AIR FORCE

															
JUNIOR AIRMAN		AIRMAN		PRIVATE		PRIVATE FIRST CLASS		PRIVATE SECOND CLASS		PRIVATE THIRD CLASS		PRIVATE FOURTH CLASS			
															
AIRMAN	AIRMAN FIRST CLASS	SENIOR AIRMAN		STAFF SERGEANT		TECHNICAL SERGEANT		MASTER SERGEANT		SENIOR MASTER SERGEANT		CHIEF MASTER SERGEANT		CHIEF MASTER SERGEANT OF THE AIR FORCE	

ENLISTED RANKS AND U.S. EQUIVALENTS
UNITED ARAB EMIRATES

ARMY

	AND SERIAL	2ND	3RD	4TH SERIAL	SERIAL					
PRIVATE	PRIVATE FIRST CLASS	CORPORAL	SERGEANT	STAFF SERGEANT	SERGEANT FIRST CLASS	MASTER SERGEANT	FOUR SERGEANT	SERGEANT MAJOR	COMMAND SERGEANT MAJOR	SERGEANT MAJOR OF THE ARMY

NAVY

NO INFORMATION AVAILABLE									
SEAMAN APPRENTICE	SEAMAN	POETTY OFFICER 3RD CLASS	POETTY OFFICER 2ND CLASS	POETTY OFFICER 1ST CLASS	CHIEF POETTY OFFICER	SEAMAN APPRENTICE	SEAMAN	POETTY OFFICER 3RD CLASS	POETTY OFFICER 2ND CLASS

AIR FORCE

NO INFORMATION AVAILABLE									
AND SERIAL	AND SERIAL	STAFF SERGEANT	SERGEANT	STAFF SERGEANT	TECHNICAL SERGEANT	MASTER SERGEANT	MASTER SERGEANT	CHIEF MASTER SERGEANT	CHIEF MASTER SERGEANT OF THE AIR FORCE

ENLISTED RANKS AND U.S. EQUIVALENTS YEMEN

ARMY

WAHIL ARF		ALIF		RAAB		RAAB AYNAL		MUBATO		
PRIVATE	PRIVATE FIRST CLASS	CORPORAL	SERGEANT	STAFF SERGEANT	SERGEANT FIRST CLASS	MASTER SERGEANT	FIRST SERGEANT	SERGEANT MAJOR	COMMAND SERGEANT MAJOR	SERGEANT MAJOR OF THE ARMY

NAVY

WAHIL ARF		ALIF		RAAB		RAAB AYNAL		MUBATO		
SEAMAN APPRENTICE	SEAMAN	PETTY OFFICER 2ND CLASS	PETTY OFFICER 2ND CLASS	PETTY OFFICER 1ST CLASS	PETTY OFFICER 1ST CLASS	CHIEF PETTY OFFICER	CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER

AIR FORCE

WAHIL ARF		ALIF		RAAB		RAAB AYNAL		MUBATO		
AIRMAN	AIRMAN FIRST CLASS	SENIOR AIRMAN	SERGEANT	STAFF SERGEANT	TECHNICAL SERGEANT	MASTER SERGEANT	SENIOR MASTER SERGEANT	CHIEF MASTER SERGEANT	CHIEF MASTER SERGEANT OF THE AIR FORCE	

APPENDIX C

MILITARY AIRCRAFT MARKINGS

